UNIVERSITAT DE BARCELONA

Communication in a MUVE: An exploratory case study of teacher interactional devices in *Second Life*

Cristina Elisa Palomeque Kovacs

UNIVERSITAT DE BARCELONA

Communication in a MUVE: An exploratory case study of teacher interactional devices in *Second Life*

Cristina Elisa Palomeque Kovacs

Tesi doctoral

Facultat d'Educació

Programa de doctorat en Didàctica de la Llengua i la Literatura

Director: Dr. Joan Tomàs Pujolà i Font

Tutor: Dr. Joan Perera i Parramon

Universitat de Barcelona, 2015

Abstract

Communication in a MUVE: An exploratory case study of teacher interactional devices in *Second Life*

by

Cristina Elisa Palomeque Kovacs

Thesis Submitted for the Degree of

Doctor of Philosophy

in

Education

Universitat de Barcelona

October 2015

Abstract (English)

This study investigates the interactional devices that a teacher used with her students in an English for Specific Puposes (ESP) setting in the Multi-User Virtual Environment (MUVE) of *Second Life* and how the different modes available in this environment were used to create meaning and communicate effectively with students. Thirteen undergraduate students of Tourism volunteered to take part in additional ESP classes in *Second Life* throughout an academic year. MUVE communication was analyzed through a multimodal notation system that recorded the verbal and non-verbal participant behavior as well as the interface actions the teacher performed on the program. Analysis of the transcripts revealed that the teacher made use of a range of transactional and interactional discursive strategies to achieve effective communication and create a comfortable learning environment. There were strategies found that were adaptive to the features of the MUVE environment such as visual addressivity, reception checks or channel checks. This study also shows that the teacher made use of interactional modifications such as negotiation strategies or self-repetitions to ensure that students were following as well as to avoid or deal with communication breakdowns. Some of these strategies made use of different communication channels. The teacher also used different channel to provide corrective feedback during the lessons and there was evidence of bimodal corrective feedback. Finally, the analysis of the transcripts also revealed that participants made use of the visual and the verbal mode to create meaning and make communication more effective in this online environment.

Abstract (Català)

Aquest estudi investiga els recursos interaccionals que una professora utilitza amb els seus estudiants en un context d'ensenyament d'anglès per a finalitats específiques en l'entorn virtual multiusuari de *Second Life* i de com els diferents modes disponibles en aquest entorn van ser usats per crear significat i una comunicació efectiva amb els estudiants. Tretze estudiants universitaris del grau de Turisme van oferir-se voluntàriament per participar en classes d'anglès a *Second Life* durant un curs acadèmic. La comunicació en aquest món virtual es va analitzar a través d'un sistema d'anotació en el qual es va transcriure el comportament verbal i no verbal dels participants així com també les accions que feia la professora sobre la interfície del programa. L'anàlisi de les transcripcions mostra que la professora va fer servir estratègies transaccionals i interaccionals per aconseguir una comunicació efectiva i crear un entorn d'aprenentatge còmode. Es van trobar estratègies que es van adaptar a les característiques d'aquest món virtual com l'adressivitat visual, les comprovacions de recepció de missatge o les comprovacions de canal. Aquest estudi també mostra que la professora va fer servir modificacions interaccionals com ara estratègies de negociació o repeticions per assegurar-se que els estudiants estaven seguint la classe així com també per evitar o arreglar problemes comunicatius. Algunes estratègies van fer ús dels diferents canals de comunicació. La professora també va fer servir diversos canals per donar retroalimentació correctiva a les classes, cosa que evidenciava l'ús de retroalimentació correctiva bimodal. En últim lloc, l'anàlisi de les transcripcions il·lustra que els participants van fer servir els modes visual i verbal en la creació de significat i per aconseguir una comunicació més efectiva en aquest entorn multimodal.

Abstract (Español)

Este estudio investiga los recursos interaccionales que una profesora utiliza con sus estudiantes en un contexto de enseñanza de inglés para fines específicos en un entorno virtual multiusuario de *Second Life* y de como los diferentes modos disponibles en *Second Life* son usados para crear significado y una comunicación efectiva con los estudiantes. Trece estudiantes universitarios del grado de Turismo se ofrecieron voluntariamente para participar en clases de inglés en *Second Life* durante un curso académico. La comunicación en este mundo virtual se analizó a través de un sistema de anotación en el que se transcribió el comportamiento verbal y no verbal de los participantes, así como también las acciones que llevó a cabo la profesora sobre la interficie del programa. El análisis de las transcripciones muestra que la profesora usó estrategias transaccionales e interaccionales para conseguir una comunicación efectiva y crear un entorno de aprendizaje cómodo. Se encontraron estrategias adaptivas a las características del mundo virtual como adresividad visual, comprobaciones de recepción de un mensaje o comprobaciones de canal. Este estudio también muestra que la profesora utilizó modificaciones interaccionales como estrategias de negociación o repeticiones para asegurarse de que los estudiantes estaban siguiendo la clase, así como también para evitar o arreglar problemas comunicativos. La profesora también usó diferentes canales para dar retroalimentación correctiva en la clase, evidenciándose el uso de retroalimentación correctiva bimodal. En último lugar, el análisis de las transcripciones ilustra que los participantes usaron los modos visual y verbal en la creación de significado, así como para conseguir una comunicación más efectiva en este entorno multimodal.

Communication in a MUVE: An exploratory case study of teacher interactional devices and modal usage in *Second Life*

by

Cristina Elisa Palomeque Kovacs

Thesis Submitted for the Degree of

Doctor of Philosophy

in

Education

University of Barcelona

September 2015

Acknowledgments

My most sincere gratitude goes to my supervisor, Dr. Joan-Tomàs Pujolà. I am truly thankful for the trust he has put in me and for his continued guidance and encouragement throughout this long process. His wise views and ability to think out of the box have truly helped me deal with obstacles during my research that were difficult to overcome.

I would also like to thank my former *Second Life* colleagues and current friends Paul Sweeney, Antonella Berriolo and Dafne González for the great times we had teaching together in *Second Life*. I have learned a lot from their passion, hard work and commitment. I want to give a special thanks to Antonella, who expertly designed the hotel that I used in this study and very generously gave it to me so that I could use it.

I am also very grateful to my 'real life' friends and former colleagues Núria Giralt and Vanesa Toquero for agreeing to be my external coders and offering their time for the inter-coder reliability session. I also want to thank Carles de Rosselló for his advice during this process as well as for taking the time to read my study and give me his insights. My gratitude also goes to Montserrat Iglesias who helped me get the institutional support I needed to carry out this study with undergraduate students. I would also like to thank my students, without them and their willingness to devote some of their free time to this project, this study would not have been possible.

Most of all, I am truly indebted to Carles, who designed the transcription program I used and tailored it to my needs. But I am especially thankful for the confidence he has built in me, for believing in me and not letting me give up. If it were not for his continued support, I believe it would not have been possible for me to complete this study.

Finally, I would like to express my gratitude to my family and friends for their support and their patience over the years. Thank you for bearing with me!

Table of Contents

List of Tables xx

List of Figures xxiii

Chapter 1: Introduction 1

Chapter 2: Computer-Mediated Communication 5

2.1. CALL 5

2.1.1. Definition of CALL. 6

2.1.2. CALL research. 7

2.2. Computer-Mediated Communication (CMC) 8

2.2.1. CMC classifications. 9

2.2.2. Linguistic and discursive features of synchronous CMC. 11

2.2.3. Synchronous CMC and language learning. 13

2.3. Interactional Approach 15

2.3.1. Interaction hypothesis. 16

2.3.2. Interaction and CMC 18

2.3.3. Communication strategies. 20

2.3.6. Communication and discourse management strategies. 28

2.3.7. Teacher discourse 33

2.4. Multimodality 38

2.4.1. Socio-linguistic approach to multimodality 40

2.4.2. Multimodal Social Semiotic Approach to multimodality. 41

2.4.3. Multimodal CMC 44

Chapter 3: Virtual Worlds 51

3.1. Definition of virtual worlds 52

3.2. History of virtual worlds 53

3.3. Features of virtual worlds 55
3.4. Virtual worlds: types 56
3.4.1. Virtual worlds: Social worlds 59
3.5. MUVEs in education 60
3.5.1. Language teaching in MUVEs. 61
3.5.2. Language learning in MUVEs. 67
3.6. *Second Life* 70
3.6.1. Verbal mode. 72
3.6.2. Non-verbal mode. 75
3.6.3. Interface. 77
Chapter 4: Objectives and Research Questions 78
4.1. Research Objectives 79
4.2. Research questions 80
Chapter 5: Methodology 85
5.1. Research Approach: Ethnographic Approach 85
5.1.1. Classroom observation. 88
5.1.2. Case study. 90
5.2. Pedagogical Scenario 92
5.2.1. Research setting. 92
5.2.2. Participants: The teacher. 93
5.2.3. Participants: The students. 94
5.2.4. The Virtual Tourism project. 96
5.3. Methods of data collection 102
5.3.1. Demographic questionnaire. 103
5.3.2. Second Life class recordings. 104

5.3.3. Post-questionnaires. 107
5.3.4. Researcher field journal. 107
5.3.5. Ethical dimension. 108
5.4. Data analysis 108
5.4.1. Computer-mediated Discourse Analysis (CMDA). 109
5.4.2. Multimodal discourse analysis (MDA). 111
5.4.3. Transcripts as tools for MDA. 112
5.4.4. Multimodal Transcriptions. 113
5.4.5. The 3M Transcription Method: a tool for multimodal discourse analysis. 115
5.4.6. Transcription of the *Second Life* sessions. 119
5.4.7. Transcription conventions. 121
5.4.8. Units of analysis. 124
5.5. Coding 126
5.5.1. Coding of verbal turns and non-verbal actions. 127
5.5.2. Coding of discourse strategies. 130
5.8. Inter-Coder Reliability 133
5.8.1. The external researchers. 133
5.8.2. The Inter-Coder Reliability session. 134
5.8.3. The ICR results. 134
Chapter 6: Analysis 137
6.1. Online Transactional Strategies 138
6.1.1. Addressivity. 138
6.1.2. Feedback Markers or Backchannels. 159
6.1.3. Timesaving Devices. 168
6.1.4. Technical Help. 169

6.1.5. Channel Checks. 174
6.1.6. Reception Check. 180
6.1.7. Reception Confirmation. 181
6.1.8. Identity Check. 183
6.1.9. Interface. 184
6.1.10. Overview of transactional strategies. 185
6.2. Online Interactional Strategies 187
6.2.1. Praise. 187
6.2.2. Agreement. 190
6.2.3. Inclusive Forms. 193
6.2.4. Humor And Small Talk. 197
6.2.5. Character Names. 201
6.2.6. Paralinguistic Strategies. 202
6.2.7. Greetings And Leave Takings. 203
6.2.8. Negative Politeness: Apologies. 205
6.2.9. Overview of interactional strategies. 206
6.2.1. Overview of discourse management strategies. 208
6.3. Teacher Interactional Modifications 209
6.3.1. Clarification Requests. 209
6.3.2. Confirmation Checks. 213
6.3.3. Comprehension Check. 218
6.3.4. Self Repetition. 225
6.3.5. Self-Reformulation. 233
6.3.6. Overall teacher modifications. 235
6.4. Corrective Feedback 237

6.4.1. Clarification Requests. 237
6.4.2. Confirmation checks. 238
6.4.3. Total recasts. 239
6.4.4. Partial recast. 241
6.4.5. Student self-repair. 244
6.4.6. Trigger and student response for corrective feedback. 244
6.4.7. Overall corrective feedback. 246
6.5. Mode usage 248
6.5.1. Verbal mode: Floorspace description. 248
6.5.2. Non-verbal mode: avatar gestures. 256
6.5.3. Interplay of Modes. 256
Chapter 7: Discussion 275
7.1. Transactional Strategies 276
7.1.1. 'I'm talking to you': Addressivity in a MUVE. 277
7.1.2. 'I'm here': Feedback Markers in a MUVE class. 282
7.1.3. BRB: Timesaving Devices in a MUVE. 283
7.1.4. 'Do you need a teleport?': Technical help in a MUVE. 284
7.1.5. 'Can you hear me, Keisha?': Channel Checks in a MUVE. 287
7.1.6. Gifting in *Second Life*: Checking and acknowledging reception. 289
7.1.7. 'Who is speaking?': Identity Check. 291
7.1.8. Interface management. 291
7.2. Interactional Strategies 292
7.2.1. 'Good job!': Praise. 292
7.2.2. 'Yes, you're right': Agreement. 293
7.2.3. 'Where should we go now?': Inclusive Forms. 293

7.2.4. “One gintonic please xdxd”: Humor And MUVE Talk. 294
7.2.5. ‘Keisha, hello!’: Character Names. 296
7.2.6. “paulaaa???”: Paralinguistic Strategies. 297
7.2.7. “Hello Co, can you hear me?” Greetings And Leave Takings. 298
7.2.8. Apologies. 299
7.3. Teacher Interactional Modifications 299
7.3.1. Negotiation devices. 300
7.3.2. Self Repetition. 303
7.3.3. Self-Reformulation. 304
7.3.4. Teacher modification strategies and modes. 305
7.4. Corrective Feedback 306
7.4.1. Types Of Corrective Feedback. 306
7.4.2. Trigger for corrective feedback. 307
7.4.3. Student response to corrective feedback. 308
7.4.4. Corrective feedback and modes. 308
7.4.5. Corrective feedback during the tasks 310
7.5. Modes 311
7.5.1. Verbal mode: Floorspace description. 311
7.5.2. Non-verbal mode: avatar gestures. 315
7.5.3. Interplay of the verbal mode: text chat and oral chat 316
7.5.4. Verbal And Visual Mode. 319
Chapter 8: Conclusion 323
8.1. Summary of findings 324
8.2. Implications for research methodology 337
8.3. Pedagogical implications 338

8.4. Limitations of the research....340
8.5. Future research directions....341
References....345
Appendix A: Glossary....373
Appendix B: English Level 1 syllabus....375
Appendix C: Snapshots and materials used in the Second Life classes....393
Appendix D: Initial questionnaire....403
Appendix E: Session Questionnaires....407
Appendix F: 3M transcription of session 1....417
Appendix G: The 3M program....421
Appendix H: Transcription conventions for the verbal mode....429
Appendix I: Codebook for turns and embodied actions....431
Appendix J: Task floorspace....439
Appendix K: CD contents....441

List of Tables

Table 1. Types of interaction (from Chapelle, 2003, p. 56).....19

Table 2. Summary of main taxonomies of communication strategies (adapted from Dörnyei and Scott, 1997) 26

Table 3. Typology of 3D virtual worlds (Warburton, 2009, p. 417) 57

Table 4. Principles in MUVE task design (Sweeney & Palomeque, 2010).....62

Table 5. Channels available in Second Life according to Herring's (2007) medium factors..74

Table 6. Overview of the modules and tasks in the Second Life sessions.....97

Table 7. Overview of Module 1 98

Table 8. Overview of Module 2 100

Table 9. Overview of Module 3 101

Table 10. Overview of the data collection methods used in the study 103

Table 11. Overview of availability of Second Life class recordings 106

Table 12. Illustration of a strategy across the verbal and non-verbal modes.....119

Table 13. Types of turns in the verbal mode by channel 127

Table 14. Functional classification of turns 128

Table 15. Example of ICR agreement.....135

Table 16. Krippendorff ICR rate.....135

Table 17. Teacher addressivity in discussion activity 154

Table 18. Teacher addressivity during guided tour activity 156

Table 19. Instances of tech help during the guided tour 174

Table 20. Teacher channel checks in the discussion activity and in the guided tour 179

Table 21. Teacher interface actions 184

Table 22. Frequencies of transactional strategies 185

Table 23. Summary of teacher transactional strategies during the discussion task 186

Table 24. Summary of teacher transactional strategies during the guided tour 186

Table 25. Teacher occurrences of praise during the discussion activity and the guided tour 189

Table 26. Instances of teacher agreement during the discussion activity and guided tour 191

Table 27. Teacher use of inclusive forms during the guided tour 196

Table 28. Use of humor during the guided tour 199

Table 29. Use of MUVE talk during guided tour 200

Table 30. Teacher use of student character names 201

Table 31. Teacher apologies during the discussion activity and guided tour 206

Table 32. Frequencies of teacher interactional strategies 206

Table 33. Interactional strategies during the discussion activity 207

Table 34. Interactional strategies during the guided tour 208

Table 35. Teacher clarification requests during the discussion and the guided tour 212

Table 36. Teacher confirmation checks during the discussion and guided tour 217

Table 37. Teacher comprehension checks during the discussion and the guided tour 224

Table 38. Teacher self repetitions during the discussion activity and the guided tour 231

Table 39. Teacher self-reformulations during discussion activity and guided tour 234

Table 40. Overall teacher modifications 235

Table 41. Overall teacher modifications in the discussion activity 236

Table 42. Overall teacher modifications in the guided tour 237

Table 43. Overview of recasts during discussion and guided tour 240

Table 44. Number of partial recasts in the discussion and the tour 243

Table 45. Types of triggers for corrective feedback 244

Table 46. Student response for corrective feedback 245

Table 47. Channels for corrective feedback 245

Table 48. Overall corrective feedback in the data 246

Table 49. Triggers for corrective feedback.....246

Table 50. Student reaction to corrective feedback.....247

Table 51. Corrective feedback during the discussion activity 247

Table 52. Corrective feedback during the guided tour 248

Table 53. Participant voice participation 250

Table 54. Participant text participation.....250

Table 55. Occurrences of non-verbal behavior.....256

Table 56. Teacher and student channel switches.....257

Table 57. Teacher channel switches and function. 261

Table 58. Teacher and student in-world reference.....265

Table 59. Types of teacher addressivity regarding the avatars' proxemics behavior.....271

List of Figures

Figure 1. Class is standing on the Golden Gate 1

Figure 2. Class engaged in a CMC discussion sitting on a carpet 5

Figure 3. CALL equation (from Egbert, 2005, p. 5) 6

Figure 4. How interaction leads to acquisition (Long, 1983a, p. 214) 17

Figure 5. Definitions for communication strategies by different authors 21

Figure 6. More definitions of communication strategies 22

Figure 7. Multimodal computer-mediated communication (Herring, 2015, p. 398) 45

Figure 8. Snapshot of the first class in Second Life. 51

Figure 9. Aldrich's HIVE continuum (Ulicsak & Wright, 2010, p. 18) 53

Figure 10. Generational traits of virtual worlds (Downey, 2014, p. 57) 54

Figure 11. Six features of virtual worlds (Book, 2004, p.2) 55

Figure 12. Communication layers in Second Life (Warburton, 2009, p. 420) 71

Figure 13. Class is underneath the Eiffel Tower 78

Figure 14. 3M method annotation interface 85

Figure 15. Description of the selected scene for the micro analysis 118

Figure 16. The 3M code analyzer interface 137

Figure 17. Teacher addressivity functions classified by classroom context 140

Figure 18. Types of technical help throughout the sessions 170

Figure 19. Overview of online strategies 208

Figure 20. Overview of the channels used in the recasts and the student reaction 240

Figure 21. Types of partial recasts according to the channel and student reaction 242

Figure 23. Teacher and student verbal participation by channels 251

Figure 24. Teacher turns by function and channel 253

Figure 25. Teacher turns during discussion activity 255

Figure 26. Teacher turns during guided tour 255

Figure 27. Verbal in-world reference and function 266

Figure 28. Participants standing around Fisherman's Wharf.....275

Figure 29. Avatars flying and exploring Lombard street from above 323

Chapter 1: Introduction

Figure 1. Class is standing on the Golden Gate

This study stems from an interest in using Information and Communication Technologies (ICT) for language learning. ICT and, in particular, the internet has allowed teachers to expand their sources of input beyond the four classroom walls as well as create new opportunities for meaningful interaction with other learners or native speakers around the world.

The research focus of my DEA was centered on the use of communication strategies by EFL learners through synchronous text-based computer-mediated communication (CMC). However, this interest started shifting towards other forms of CMC that were supported by a graphic interface, namely, Multi-User Virtual Environments (MUVEs). MUVEs have a great

potential for communication and language learning as interaction is embedded in a spatial and visual context, features that most synchronous CMC environments lack.

A growing body of research has developed around the study of communication and task design in Multi-User Virtual Environments (Deutschmann & Molka-Danielsen, 2009; Gowans, 2011; Peterson, 2005, 2006, 2008, 2010; Wigham, 2012). MUVEs have attracted the interest of many educators because graphic-based environments contain non-verbal cues that can compensate for the distance between participants. Furthermore, there are MUVEs such as *Second Life* that are multi-channel, allowing for synchronous communication through voice and text channels. Thus, the MUVE's visual and spatial interface as well as its voice feature have been found to provide a sense of presence, which can be difficult to achieve in online courses (Sweeney, Palomeque, González, Speck, Canfield, Guerrero & MacKichan, 2010). These abovementioned features plus its customizable nature constitute MUVEs as suitable arenas for practitioners who are interested in experimenting and innovating with task design in online environments as well as for educators who want to encourage creativity among students through the use of the communication modes available in these online enviornments.

This interest in MUVEs led me to get involved with a private language company in *Second Life* where I took a teacher training course to learn how to teach in the virtual world of *Second Life*. After the training course I worked for two years for this company designing a beginner's course to learn Spanish for Travel Purposes and I subsequently taught the course with several groups. This experience led me to write joint chapters for several books on the experience gathered from teaching in *Second Life* (Sweeney et al, 2010; González, Palomeque, Sweeney, 2011).

I also noticed that although many teachers and researchers were showing an interest in the possibilities of carrying out teaching and learning experiences in MUVEs, there was little research in this area. This encouraged me to study this promising field.

Furthermore, I was currently teaching English for Specific Puposes (ESP) courses to undergraduate students of Tourism. The first level of the ESP course in Tourism is very practical, one of the aims is for students to know how to deal with certain situations related to the tourism industry. Due to its highly practical nature and building on my experience from teaching foreign language courses related to Tourism in *Second Life*, I thought that my students could benefit from learning through immersive scenarios in a MUVE.

Another reason for my interest in MUVEs was to explore the complexities of communicating in a multimodal environment that has several channels, which are text-based and voice-based, as well as visual and spatial modes. I wanted to find out how participants in a learning community, manage these different channels and modes of communication, and what strategies participants use to achieve their communication goals.

This study aims to investigate different interactional devices that the teacher used in the MUVE of *Second Life* and find what strategies were used to achieve successful communication in this online environment. It also aims to analyze how different verbal, visual and spatial modes are used jointly to create meaning in this multimodal world.

The literature review has been divided into two chapters, this first chapter is about computer-mediated communication and the second focuses on virtual worlds. Chapter 2 reviews literature in synchronous CMC environments. It also provides an overview of the interactionist approach to communication and outlines communication and discourse management strategies relevant in synchronous CMC. This chapter also includes features of teacher discourse, as the present study is based on teacher discourse. This chapter ends with a section on a multimodal approach to communication and multimodal CMC. Chapter 3

introduces virtual worlds and situates *Second Life* within a virtual world framework. This chapter also discusses different aspects related to virtual worlds such as learning and teaching and task design. This chapter ends with a description of the *Second Life* environment.

Chapter 4 presents the objectives of the study alongside with the research questions. This chapter is followed by Chapter 5, which outlines the research methodology and data analysis approach adopted.

Chapter 6 analyses the data collected and Chapter 7 discusses the results based on the analysis. The study is concluded in Chapter 8, which starts with a summary of the results, follows with the methodological and pedagogical implications and ends with the limitations and future lines for research.

Some dissertations introduce their chapters with a quote. Taking into account the multimodal nature of the setting where this study takes place, every chapter has been introduced with a meaningful picture showing a snapshot related to this study. Figure 1, for example, shows a snapshot of a class standing on the Golden Gate. We can see that two participants are using the voice chat because there are green sound waves above two avatars and there is also one participant using the text chat. This picture illustrates computer-mediated communication occurring through two different synchronous channels: the text chat and the voice chat.

Chapter 2: Computer-Mediated Communication

Figure 2. Class engaged in a CMC discussion sitting on a carpet

This chapter has been divided into three main parts. The first section is devoted to Computer Assisted Language Learning (CALL) and focuses on the type of CALL used in this study, Computer-Mediated Communication (CMC). The second section is devoted to the interactionist approach to language learning and covers communication strategies, discourse management strategies and teacher modifications. The last section is devoted to multimodality and will provide an overview of CMC through a multimodal lens.

2.1. CALL

This dissertation is framed within the research paradigm of CALL as it aims to study the communication that takes place among participants in an online environment. This section starts by providing a definition of what CALL consists of in light of the definitions provided

by several CALL researchers. Following, is an overview of the main concerns in CALL research and its current lines of interest. The next section focuses on the type of CALL research this study has adopted, i.e., computer-mediated communication.

2.1.1. Definition of CALL.

From the research perspective, Levy (1997, p. 1) provides a good starting definition of CALL, he defines it as "the search for and study of application of the computer in language teaching and learning". This definition comprises many different fields of interest within the CALL research framework. Egbert (2005, p. 4) also provides a succinct, and practical definition stating that CALL is "learners learning language in any context with, through and around computer technologies". This definition highlights the role of technology as a mediation tool, suggesting that participants can interact with technology in different ways. Egbert expands Levy's definition and broadens the role of technology, as technology is the medium through or around which language is learned. These definitions are broad and encompass studies on any language learning experience mediated by technology. However, technology should be considered more than just a medium in CALL research, it is important to understand how the technology affects the language learning process to obtain a full picture of how language is learned in CALL environments (Hubbard, 2015).

Learners (with their thoughts, behaviors, motivations, experiences and understandings)
+ **language** (including its status and structure)
+ **context** (physical and temporal environment and the social, economic, cultural and linguistic influences)
+ **one or more tools** (and the affordances the tool provides)
+ **tasks / activities** (content, structure, and organization)
+ / - **peers and teachers** or others who can affect the process

= CALL

Figure 3. CALL equation (from Egbert, 2005, p. 5)

Egbert (2005) describes CALL as an equation with variables that add up to the concept of CALL (see figure 3). According to Egbert, CALL research is the study of one or more of these variables from a particular approach. Each of these variables conform and shape the interaction in the CALL communicative event. It is important to take into account all these variables and study the interrelationships between the different factors and how they affect the language learning and teaching process.

2.1.2. CALL research.

Although some authors have attempted to provide some research frameworks for CALL research such as Chapelle's (2001) task design framework, which takes an interactionist approach, or Warshauer & Healey (1998) and Bax's (2003) framework on the history and directions of CALL, CALL does not have established norms of research. CALL has mostly borrowed and adapted external theories from other fields in linguistics and education such as second language acquisition (Hubbard, 2009). Furthermore, CALL research is dynamic and has a changing nature due to the rapid evolution of technology, which means that CALL research needs to be constantly updated (Hubbard, 2009).

Early CALL research was focused on comparing CALL to face-to-face environments; however, the value of such studies is limited as most have led to no meaningful findings (Hubbard, 2009). Current research is interested in the relationships between learners, teachers and technology within a socio-cultural context, thus shifting towards more qualitative approaches (Kern, 2006, p. 201). Hubbard (2009) outlines the main concerns of CALL research in the past years:

- Computer mediated communication; especially, interaction in synchronous chat settings and email in tandem settings.
- Visual, text and sound annotation to promote comprehension and vocabulary acquisition.

- Effectiveness of online constructivist activities, including development of communities and collaborative writing.

More recently, however, research interest has focused on CMC, gaming, and mobile learning. The interest in gaming and serious games has attracted many researchers who see them as arenas to increase learner motivation and develop interactional skills (Hubbard, 2015). Kern (2006) also highlights the fields of CMC, telecollaboration and electronic literacies as some of the fields current CALL research is focused on. We can see that CMC appears in the different lists of current areas of CALL research interest suggested by different authors. Thus, although CMC became popular in the 90s, it is still one of the main fields of research in CALL (Hubbard, 2009; Kern, 2006; Levy & Stockwell, 2006).

2.2. Computer-Mediated Communication (CMC)

Computer-mediated communication has experienced a rapid evolution thanks to the Internet and the advent of social networking tools such as blogs, *Facebook* or *Twitter* as well as learning management systems like *Moodle* or *Blackboard*. The Internet has also reshaped language learning and has transformed computers into tools not only for accessing information but also for communicating with other people. Furthermore, the vast amount of information that resides in the global network makes it a rich source of data for language researchers. Thus, these promising learning affordances coupled with the easy availability and access to CMC tools, have made CMC on of the most popular fields of research among language teachers and CALL researchers (Hubbard, 2009).

CMC has also broadened the scope of exposure and interaction opportunities for the language classroom. Before the advent of the Internet, interaction was limited to other students in the classroom and the teacher. CMC has enabled learners to communicate with other people from different parts of the world, thus providing a greater amount of authentic target-language input as well as meaningful target-language practice. Furthermore, the

Internet allows students to have a real audience, rendering the tasks more authentic. The classroom has become ubiquitous, the traditional four-wall classroom is not necessary anymore. The only condition to communicate with the outside world is to have a computer and an Internet connection.

Herring (1996, p. 1) defines CMC as the "communication that takes place between human beings via the instrumentality of computers". Therefore, computers are the mediators for this type of communication. As this definition is very broad, several authors have tried to define CMC based on different classifications.

2.2.1. CMC classifications.

CMC tools can be classified in a number of ways. The two main dimensions used to classify CMC are by time or mode. Regarding the temporal dimension, CMC can be synchronous or asynchronous, depending on whether the messages are delivered in real time or not. If participants have to be online at the same time to send and receive messages, it is considered synchronous CMC. On the other hand, in asynchronous CMC, participants do not need to be online at the same time as the messages are stored and they can read the message whenever they go online. Concerning the modal dimension, CMC can be text, voice or video-based. Text-based CMC includes text-based chat or email, whereas non-text based CMC is audio- or video-based and includes audio or video conferencing tools such as *Skype*.

Another way to classify CMC is according to the number of participants that take part in the communication. CMC interactions can be one-to-one or they can be one-to-many, involving more than two participants. CMC with many participants gives learners exposure to the target language from a number of different people, but interactions can be more anarchic and the teacher needs to have a higher degree of caution regarding the students' contributions (Levy & Stockwell, 2006). On the other hand, in one-to-one communication, a closer

relationship between the two participants can be built and learners will interact with less inhibition than with multiple participants (Söntgens, 1999).

Despite the numerous classifications, the most popular classification in CMC research is that of synchronous (SCMC) and asynchronous (ACMC) communication.

In asynchronous CMC, participants have more freedom and flexibility in online collaborative tasks, especially when different time zones are involved. Also, it allows learners to think about the message they want to write, allowing the learners time to edit their message, as there are no time constraints. Typical tools in asynchronous CMC are e-mails, SMS, mailing lists or bulletin boards, blogs and wikis.

Synchronous CMC, on the other hand, is considered the most interactive in the CMC range (Paramskas, 1999). Many researchers have found that face-to-face interaction is similar to synchronous CMC as both consist of real time interactions. During these interactions learners engage in negotiation in which the learners receive input, output and feedback in a similar way. The advantages of synchronous CMC are that students can exchange information in real time either orally or in writing and all the participants who are logged in can read or listen to messages and respond immediately in speaking or writing. The disadvantage is that all participants must be online at the same time, which can be difficult if the participants are in different class times or time zones. Typical tools for SCMC are chats, MOOs and video or audio conferencing

There is not a generalized agreement as to what is considered CMC and what is not. Herring (1996), on the one hand, includes any communication that occurs between humans via computers and thus includes the audio and the video mode. Other authors consider CMC to be exclusively text-based (Murray, 2000). This study takes the broader definition that Herring (1996) provides to study CMC. As we will see in the following section, online

communication is not clear-cut and text-based CMC is strongly influenced by the oral language.

The choice of the type of media used for CMC will have an effect on the communication as each type of CMC has its affordances and constraints. Levy & Stockwell (2006) outline the modal considerations that should be taken into account when undertaking CMC research, each dimension shapes communication in a different way and has an effect on language learning and teaching. One of such factors is the temporal factor, which refers to the time it takes to send and receive a message; the social and psychological factor considers the relationship between the participants; the linguistic dimension focuses on the type of language used, the material factor are the tools and equipment used to carry out that particular type of CMC and finally, the individual dimension refers to personal preferences when communicating (Levy & Stockwell, 2006, p. 97-107). The following section will look at how synchronous CMC shapes learner language.

2.2.2. Linguistic and discursive features of synchronous CMC.

It is important to bear in mind that although there are many aspects that face-to-face communication and CMC share, there are also differences. In this section, these differences as well as the linguistic features of synchronous CMC will be outlined.

Research in CMC has found that synchronous CMC shares many of the features of oral discourse due to its real-time nature, while asynchronous CMC bears a closer resemblance to written language (Warshauer, 1996; Sotillo, 2000). Although CMC bears close resemblance to spoken or written language, online discourse holds idiosyncratic features that are characteristic of the CMC medium (Levy & Stockwell, 2006).

As has been seen in the previous section, when language use is mediated by technology, the technical medium has an effect on communication at different levels (Levy & Stockwell, 2006). Herring (2001) states “while the case for the deterministic influence of the

computer medium on language use is often overstated, properties of computer messaging systems nonetheless play a significant role in shaping [computer-mediated communication]" (p 614). Thus, the communication produced through CMC will necessarily be shaped by the technical medium.

Some of the features that are specific to CMC contexts and are not present in face-to-face contexts are the use of paralinguistic devices like emoticons (Cherny, 1995; Smith, 2003) or timesaving devices like abbreviations (Herring, 2001; Werry, 1996). Werry (1996) identifies unique features in synchronous CMC and he finds a high degree of abbreviations and short turns in learner discourse. He also finds that Internet Relay Chat (IRC) users employ a range of unique linguistic and interactional strategies to communicate in an environment with spatial and visual constraints and that many of these strategies try to simulate a face-to-face environment and compensate for the lack of paralinguistic cues.

Another interesting feature in SCMC is the presence of playful language. Warner (2004) reported a high density of playful language in his SCMC data between learners of German. Other sociocultural features found in SCMC include sarcasm, flaming and humor (Baym, 1995; Sotillo, 2000). Herring (2001) also notes that in synchronous CMC participants use non-standard writing features with the aim of imitating spoken language (e.g. providing textual representation of auditory information such as laughter) or playing with language. She argues that this is not a sign of impoverished language, but rather, illustrates that participants are adapting to a medium and using it to communicate more effectively.

The synchronous medium variable has also been reported to have an influence on structural complexity: synchronous CMC has been found to be less complex than asynchronous CMC due to its unplanned nature (Herring, 2001).

Finally, at a turn level, Simpson (2005) and Herring (1996) found that synchronous CMC was characterized by disrupted turn adjacency and overlaps. Herring argues that

although this 'loose coherence' can be potentially confusing, it can also be used by the learners for language play and to 'enjoy intensified interactivity' (Herring, 1999, par. 62). She also argues that text chat has a persistent textual record that learners can use, and this can make interaction and coherence possible in text-based CMC, and allow the coherence to be looser than in a face-to-face context.

Thus, in this section we have seen that the technical medium shapes the communication in synchronous CMC at a lexical, structural and turn level. Furthermore, synchronous CMC possesses unique features that make it different from face-to-face interaction.

2.2.3. Synchronous CMC and language learning.

Synchronous CMC has attracted the attention of many language researchers because it has been found that the use of synchronous online discussion in general is beneficial for language learning (e.g. Beauvois, 1998; Kern, 1995; Lee, 2002; Pelletieri, 2000). One of the main reasons for this claim is that CMC tools facilitate interaction and negotiation of meaning (Lee, 2002). The interaction generated in these environments has shown to have a high density of communication strategies (Lee, 2002; Smith, 2003; Blake, 2000), in a similar fashion to face-to-face conversations.

Although SCMC shares many traits with face-to-face contexts, these online tools have some advantages over face-to-face communication. In text-based synchronous CMC, learners can focus on form (Pellierteri 2000; Warschauer, 1997) as students can see their conversation in written form on the computer screen. Collentine (2009), however, found that attention to metalinguistic issues had a low presence regardless of the students' level. She points out that the lack of attention to metalinguistic issues could be a feature of SCMC as learners focus all their attention on task demands. Nevertheless, focus on form can be carried out after the

synchronous interaction as transcripts can be printed and used by teachers as a monitoring or assessment tool and used as a snapshot of learners' interlanguage (Tudini, 2003).

Another advantage is that SCMC is found to increase the participation of quieter students, who, when interacting online, participate as much or even more that other students who usually dominate face-to-face discussions. Chou (2001), for example, found that synchronous CMC offers more democratic participation. Thus, synchronous CMC can increase social equality and learner participation (Warschauer, 1996; Kern, 1995 and Chun, 1994; Chou, 2001).

SCMC is also beneficial in terms of motivation and improvement of student attitude towards the target language (Warschauer, 1996; Beauvois & Eledge, 1994). It has been reported to increase the total production of language by students (Kern, 1995; Warschauer, 1996). Although it is found that asynchronous CMC produces more complex language than synchronous CMC (Levy, 2006, Sotillo, 2000), some studies have reported that students tend to produce more complex language in chatrooms than in face-to-face conversational settings (Warschauer, 1996; Kern, 1995) as this medium encourages learners to construct knowledge collaboratively (Warschauer 1996, 1997).

Another benefit of synchronous CMC is that it enhances social interaction (Herring & Nix, 1997, cited in Herring, 2001) and helps to produce a feeling of community among its participants (Darhower, 2002). Darhower (2002) analyzed the interactive features of SCMC used by students and their teacher and found that learners developed their sociolinguistic competence and at the same time they built a social community by showing "solidarity and enjoyment" (Darhower 2002, p. 25).

Nevertheless, synchronous CMC has a number of classroom management issues that should be taken into consideration before undertaking any task in this environment. Firstly, it should be noted that chat projects with learners from different countries are difficult to

arrange because they have a time constraint: learners have to be online at the same time, which can be difficult, especially when they are in different time zones. Nevertheless, both synchronous and asynchronus CMC have been reported to be a good medium to develop intercultural communication through tandem projects (Chun, 2011; O'Dowd, 2003; Stickler & Emke, 2011).

Another issue is that the synchronicity of the environment can cause the learners to feel anxious for the limited thinking and editing time for their messages. Secondly, although open chats have the advantage of exposure to authentic input and native speakers, this input may not always be appropriate for a class setting, therefore, the teacher must decide whether to use an open chat setting or create a private chat room.

Finally, one of the differences between text and voice-based synchronous CMC and face-to-face communication is that synchronous CMC lacks visual aids that are part of communication. Chats make up for this through emoticons and other text-based paralinguistic devices (Negretti, 1999). Secondly, chat communication is often disrupted and discontinuous with many topics initiated and being carried out simultaneously (Negretti, 1999). Thus, learners need to familiarize themselves with a number of features when engaging in CMC interaction such as the target language, typing in messages and reading their peer's messages at a fast pace, emoticons and dealing with having different threads occurring at the same time.

2.3. Interactional Approach

Interaction is reported to be an essential factor in language learning and acquisition (Vygotsky, 1978; Cazden, 1988; Long, 1983a). In particular, negotiation of meaning and interactional modifications that occur in interaction play an important role in the language learning process (Long, 1985).

There are several hypotheses that link interaction to language acquisition. These hypotheses can be classified into two groups. The first group consists of reception-based theories, which focus on the learner's comprehension of the L2. The second group consists of production-based theories, which focus on the learner's attempts to produce in the L2 (Ellis, 1990). Other researchers such as Long (1983a) have taken ideas from both approaches to elaborate a hybrid theory, the interaction hypothesis.

Within the reception-based theories, Krashen (1982) proposed a theory that had a great impact on second-language acquisition studies. He developed a model for second-language learning called the 'input hypothesis'. Through his input hypothesis, he argues that when learners receive input that is just beyond the learner's current level of competence (i+1), it pushes learners to advance in the next step in their interlanguage development.

The input hypothesis attracted the attention and work of many researchers and led to the formulation of the interaction hypothesis in SLA.

2.3.1. Interaction hypothesis.

Long (1983a) took the input hypothesis a step further and proposed the interaction hypothesis, according to which input is made comprehensible as a result of modifying the structure of conversations when communication problems arise.

Whereas Krashen focuses on comprehensible input, Long focuses on how this input is made comprehensible. Modified interaction is considered a necessary process for mutual understanding to take place (Long, 1983a). Long defines conversational interaction as an ongoing negotiation process. He argues that learners need the opportunity to interact with other speakers to engage in processes in which they adapt what they are saying until the interlocutor shows signs of understanding.

Modified interaction does not always involve linguistic simplification. It may include elaboration, slower speech rate, gesture, or the provision of additional contextual cues. They

can also occur through modifications of the interactional structure of the conversation (Long, 1983a). Some examples of these modifications are:

a) Comprehension checks: efforts to ensure that the learner has understood.
b) Clarification requests: efforts to get the speaker to clarify something that has not been understood. These requests lead to a modification of the interlocutor's output.
c) Self-repetition or paraphrase: the speakers repeat their sentence either partially or in its entirety.

Research has demonstrated that conversational adjustments can aid comprehension. These interactional modifications indicate that there is negotiation of meaning. Long (1983a) identifies two kinds of negotiation: (1) negotiation aimed at avoiding conversation trouble and (2) negotiation aimed at repairing discourse when trouble occurs.

The interaction hypothesis envisions communication as a two-way process. Two-way communication is very relevant to acquisition because the learner is able to provide feedback to his interlocutor on his comprehension or lack of comprehension. Through negotiation when there is a lack of comprehension, the interlocutor modifies his output so the interlocutor can obtain comprehensible input.

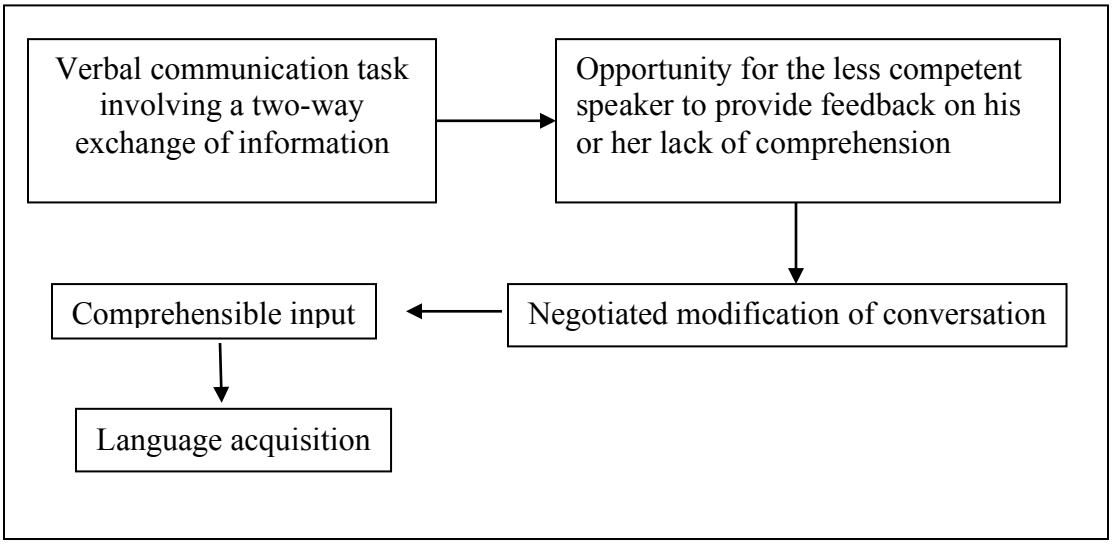


Figure 4. How interaction leads to acquisition (Long, 1983a, p. 214)

Empirical studies within the framework of the interactionist SLA theory have shown that negotiation of meaning, which facilitates the comprehension of input through interactional modifications, is necessary in the process of language acquisition (Long, 1981; Pica, 1994). In section 2.3.7.1. in this chapter, teacher interactional modifications will be outlined.

2.3.2. Interaction and CMC.

As has been discussed in the previous section, interaction is at the heart of language learning, but it is important to consider what kind of interaction when applying it to CALL. When thinking of interaction in CALL, we can identify different types according to the role of the computer. Interaction can take place between two or more interlocutors through a computer (CMC), it can take place between a person and a computer and it can occur among people around a computer (Chapelle, 2003).

Ellis (1999) describes three perspectives from which researchers have studied interaction in language learning. The first perspective is the interaction hypothesis, which has been described in the previous section. This hypothesis comes from the study of conversation and focuses on what happens during a communication breakdown (Long, 1983a). The second perspective is the sociocultural theory which also studies conversation but focuses on the interlocutor's help to co-construct meaning (Lantolf & Appel, 1994). The third approach is the depth of processing theory, which focuses on the level of cognitive processing in learning. These three approaches do not exclude one another but do offer different benefits. Chapelle (2003) offers a classification (see table 1) to account for the different perspectives in interaction described by Ellis and adds a second type of interaction, communication between person and computer, to adapt it to all the dimensions in CALL research.

Table 1

Types of interaction (from Chapelle, 2003, p. 56)

Basic types of interaction		**Perspectives on the value of interaction**		
		Interaction hypothesis	**Sociocultural theory**	**Depth of processing theory**
Inter-	between people	negotiation of meaning	co-constructing meaning	prompting attention to language
	between person and computer	obtaining enhanced input	obtaining help for using the language	prompting attention to language
Intra	within the person's mind	attending to linguistic form	stimulating internal mental voice	cognitive processing input

This study will focus on interpersonal communication from an interactionist approach, as the focus is the communication that occurs between the teacher and the students mediated by a computer.

2.3.2.1. Interaction, CMC and language learning.

We have seen in the previous chapter that CMC is a field in CALL that is especially rich for research based on the interactionanist approach (de la Fuente, 2003; Stockwell & Harrington, 2003; Lee, 2001, 2002b; Blake, 2000) as one of the main CMC focuses is the interaction between people mediated by the computer.

One of the features that has attracted attention among researchers is the negotiation of meaning that CMC is reported to foster (Lee, 2002, 2002b; Blake, 2000). It is believed that negotiation of meaning can contribute significantly to the SLA process because learners can identify where they are having problems with their interlanguage through negative feedback from their interlocutor. Furthermore, the learners will receive immediate feedback from their interlocutor, which is the most useful moment to receive the feedback (Skehan, 1998).

Toyoda & Harrison (2002) and Tudini (2003) studied cases of negotiation of meaning in chat sessions. Pellieteri (2000), on the other hand, focused her study on negotiation of form

in synchronous CMC. In this study, learners negotiated over all aspects of the discourse, which pushed learners to engage in form-focused interaction. She concludes that synchronous CMC can play an important role in the development of grammatical competence in the target language. Thus, SCMC is reported to foster both negotiation of meaning and negotiation of form. In fact, Salaberry (2000b) argues that text-based CMC provides a ground where focus on meaning and focus on form meet.

Detractors of the use of chat for language learning argue that studies show that the language produced is very fragmented, abbreviated and contains spelling errors (Lamy & Goodfellow, 1999a). Nevertheless, the majority of studies indicate that CMC is beneficial for language learning. CMC has been reported to improve language performance in different areas. Salaberry (2000a), for instance, found that learners of Spanish involved in synchronous online conferencing improved in their morphosyntactic skills. There are also reports on oral skills, like Payne and Whitney's (2002), who found that learners increased in their oral proficiency of the target language when participating in chat sessions.

Thus, it can be concluded that CMC can benefit language learning through negotiation of meaning and form and improve language performance.

2.3.3. Communication strategies.

Communication strategies are devices used in interaction to aid in the comprehension and mutual understanding of the communication process, it is the 'oil' that is needed for the smooth running of an interaction.

Many authors have provided different definitions of communication strategies. We will review the definitions provided by the most relevant authors in research in chronological order so as to see the evolution in the concept of communication strategies.

Selinker (1972) coined the term "communication strategy" in his paper *Interlanguage*. He viewed "strategies of L2 communication" as one of the five central processes involved in

L2 learning. However, Váradi (1973) is considered to be the first researcher to undertake the first systematic analysis of strategic language behavior. A few years later, Tarone, Cohen & Dumas (1976) published a study focusing on communication strategies and provided the first definition of "communication strategy" as well as a taxonomy for communication strategies.

Figure 5 shows some definitions of communication strategies (CS) that different authors have suggested:

Tarone, Cohen & Dumas (1976, p. 77) – CS are "a systematic attempt by the learner to express or decode meaning in the target language, in situations where the appropriate systematic target language rules have not been formed"

Tarone (1977) – conscious CS are used by an individual to overcome a crisis which occurs when language structures are inadequate to convey the individual's thought.

Corder (1977) – a systematic technique employed by a speaker to express his meaning when faced with some difficulty

Farch and Kasper (1980) – attempts by the learner to overcome communication problems by compensating for a lack of linguistic knowledge

Faerch and Kasper (1983) – potentially conscious plans for solving what an individual presents itself as a problem in reaching a particular communicative goal.

Stern (1983) – techniques of coping with difficulties in communicating in an imperfectly known second language

Ellis (1985, p.182) – CS are psycholinguistic plans that exist as part of the language user's communicative competence. They are potentially conscious and serve as substitutes for production plans that the learner is unable to implement.

Figure 5. Definitions for communication strategies by different authors

According to these first definitions, communication strategies constitute a subtype of L2 problem-management efforts, dealing with language production problems that occur at the planning stage. They are separate from other problem-solving devices such as *meaning negotiation* and *repair* mechanisms because these devices do not belong to the planning stage. They have already surfaced during the course of communication. However, in 1980 this difference seems to disappear and Tarone integrates meaning negotiation strategies into

communication strategies and Canal provides a broader definition of communication strategies (see figure 6).

Tarone (1980) – CS relate to a mutual attempt of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared. Canale (1983) – any attempt to "enhance the effectiveness of communication"

Figure 6. More definitions of communication strategies

Tarone (1980) introduces an *interactional* aspect as she defines communication strategies as a "mutual attempt to clarify meaning". Tarone includes various repair mechanisms in her concept of communication strategies, if their intention was to "clarify intended meaning rather than simply correct the linguistic form" (1980, p. 424).

As we can observe in figures 5 and 6, there are many different definitions of communication strategies. Some authors see them as an individual process, others as a cooperative process, some think that communication strategies have an exclusively defensive role and others extend its scope from the defensive domain. As a result of these multiple interpretations, several taxonomies have emerged as well as different views for studying communication strategies.

There are two main views regarding the study and research of communication strategies:

a) The **psycholinguistic view**, defines communication strategies as cognitive internal processes within the individual. They are interested in investigating the psychological processes underlying the use of communication strategies.
b) The **interactional view**, on the other hand, defines communication strategies as a collaborative, interactive process. This approach deals with the linguistic manifestations brought about by the gap between communicative intentions and the linguistic resources available to the learner to realize them.

Faerch and Kasper, who developed a well-known taxonomy, take an intermediate view. Their view is very similar to Tarone's but they differ in the view that for Faerch and Kasper, communication strategies are an individual process, whereas Tarone visualizes them as a cooperative process. Thus, identification of types of communication strategies depends on the view the researcher takes. This study has adopted an interactional view, understanding that communication strategies arise in interaction and are part of a cooperative process between at least two speakers.

2.3.3.2. Taxonomies.

The different views and definitions of communication strategies have caused a great proliferation of taxonomies concerning communication strategies. These taxonomies can be classified into two groups, according to the view the researcher adopts on communication strategies. Those that hold a psycholinguistic view tend to reduce the number of strategies and classify them into two groups, conceptual and code strategies. Conceptual strategies are those in which the user manipulates a concept of the target referent to try to explain the item. Code strategies are those where the learner manipulates his/her linguistic knowledge to communicate. On the other hand, those that hold an interactional view consider many more strategies which are usually grouped in reduction strategies, if the learner avoids the problem, or achievement strategies, if the learner tries to communicate his message.

a) Psycholinguistic view

The taxonomical approach of the psycholinguistic view focuses on the description of the psychological processes used by L2 learners, characterizing the cognitive decisions humans make in order to accomplish reference. It is a description of cognitive processing. Some strategies are behavioral and can be directly observed, others are mental and behavioral but not easily observable, while others are just mental. Some authors such as Bialystok (1983, 1990) and Kellerman (1991) have developed strategy frameworks on the basis of degree of

explicitness of knowledge and the kind of knowledge. The most relevant researchers from the psycholinguistic view are Bialystok and the Nijmegen Group.

b) Interactional view

The taxonomical approach of the interactionist perspective focuses on the description of the language produced by L2 learners, characterizing the means used to accomplish reference in terms of observed forms. It is a description of observed forms in L2 output. The main researchers from the sociolinguistic view are Tarone and Yule.

According to the interactionist approach, adjustments in the learners' utterances (input and output) occur when either the listener or the speaker receives negative feedback or incomprehensible messages. The interlocutors are then pushed to make adjustments, which are modification devices that help interlocutors overcome comprehension difficulties. Thus, communication strategies are a shared act in which both speaker and hearer have an active role, as both interlocutors work jointly to achieve mutual understanding.

Although Tarone and Faerch and Kasper have different views regarding their conceptualization of communication strategies, as described in the previous section, they share the same linguistic basis and have very similar taxonomies.

c) Integrated approach

Finally, Dörnyei and Scott's (1997) taxonomy is considered to be a summary of the main taxonomies available in communication strategy research. They include a list of meaning-negotiation strategies from Tarone's communication strategies taxonomy as well as *stalling strategies* that help speakers gain time to think and keep the communication channel open.

An interesting distinction Dörnyei and Scott (1997) make is related to the level of interaction with the interlocutor. According to this criteria, strategies can be (1) direct, when the speaker looks for an alternate means of conveying their message or abandons, (2) indirect, stalling or cover strategies, or (3) interactional, where the success of the communication goal depends on both participants.

Dörnyei and Scott also integrate every potentially intentional attempt to cope with any language-related problem of which the speaker is aware during the course of communication. This conceptualization aims to cover all the different types of communication problem-management mechanisms discussed in the L2 literature.

Table 2 shows Dörnyei and Scott's (1997) extensive summary of the main taxonomies on communication strategies covering Tarone, Faerch & Kasper, Bialystok, Paribakht, the Nijmegen group and ending with their own proposal. The words in bold in the following table represent the names of the categories into which each author has classified their communication strategies.

These taxonomies offer a range of language devices and different degrees of elaborateness. On the one hand, the Nijmegen Group, offer a restricted taxonomy that limits their view of communication strategies to lexical compensatory strategies. On the other hand, Dörnyei and Scott (1977) offer the richest and most varied view, with communication strategies that concern L2 problem-management in general.

Table 2

Summary of main taxonomies of communication strategies (adapted from Dörnyei and Scott, 1997)

TARONE 1977	FAERCH + KASPER 1983	BIALYSTOK 1983	PA
Avoidance -Topic avoidance -Message abandonment **Paraphrase** -approximation -word coinage -circumlocutio **Conscious transfer** -literal translation -language switch **Appeal for assistance** **Mime**	**Formal reduction** -phonological -morphological -syntactic -lexical **Functional reduction** -actional red -modal red - red of propositional content -topic avoidance -message abandonment -meaning replacement **Achievement strat** *Compensatory strat* -code-switching -interlingual transfer -inter/intraling transfer -Il based strat (generalization, paraphrase, word coinage, restrcturing) -coop strat -non-linguistic strat *Retrieval strat*	**L1 based strat** -language switch -foreignizing -transliteration **L2 based strat** -semantic contiguity -description -word coinage **non-linguistic strat**	**Linguistic ap** *semantic conti* -superordinate -comparison *-circumlocutio* *-metalinguistic* **Contextual ap** -Linguistic co -use of L2 idio -transliteration proverbs -Idiomatic tra **Conceptual a** -Linguistic co -use of L2 idio -transliteration proverbs -Idiomatic tra **Conceptual a** -Demonstratio -Exemplificati -Metonymy

BIALYSTOK 1990	NIJMEGEN GROUP 1990	DÖRNYEI + SCOTT 1995	
Analysis-based strat **Control-based strat**	**Conceptual strat** -Analytic -Holistic **Linguistic/code strat** -morphological creativity -transfer	**Direct strat** *Resource deficit related strat* -message abandonment / reduction / replacement -circumolocution -approximation -use of all-purpose words -word-coinage -restructuring -literal translation -foreignizing -code switching -use of similiar sounding words -mumbling -omission -retrieval -mime *Own-performance problem related strat* -self-rephrasing -self-repair *Other performance problem...* -other-repair	**Interactional s** *Resource defici* Appeals for he *Own-performa* -comprehensio -own accuracy *Other-perform* -asking for rep confirmation -guessing -expressing no -interpretive su -responses **Indirect strate** *Processing tim* -use of fillers -repetitions *Own performa* -verbal strat ma *Other performa* feigning unders

2.3.6. Communication and discourse management strategies.

From an interactionist perspective, interaction is a dynamic process by which participants manage their interaction through the use of discourse management strategies to achieve their communication goals (Condon & Cech, 2010). These discourse management strategies that participants employ can be classified into transmission management (Condon & Cech, 2010) or transactional strategies (Peterson, 2008), and interpersonal management (Condon & Cech, 2010) or interactional strategies (Peterson, 2008). The former focus on the transfer of information, either to check the successful transmission or reception of the message or to make the communication process easier to avoid communication breakdowns (Condon & Cech, 2010). The latter are used to create social bonds, express solidarity and maintain social relations (Brown & Yule, 1983; Brown and Levinson, 1983).

This study uses Peterson's (2008) classification of transactional and interactional discourse management strategies. Although communication and discourse strategies are often used indistinctly, Peterson (2008) makes a distinction between communication strategies and discourse management strategies. Communication strategies are used to solve a communication problem that has already occurred, whereas discourse management strategies are used to try to stop problems from occurring. Based on these definitions, this study aims to describe the online discourse management strategies that the teacher uses in a virtual world with her students to avoid communication problems, enhance the effectiveness of communication and create a positive social environment conducive to learning. However, communication strategies will also be considered when analyzing teacher interactional modifications (see section 2.3.7.1.1.) and corrective feedback provision (see section 2.3.7.2).

2.3.6.1. Communication and discourse strategies in non-avatar-based environments.

There is extensive research on student communication and discourse strategies in text-based synchronous CMC environments (Lee, 2001, 2002; Pelletieri, 2000; Smith, 2003; Tudini, 2003).

Lee (2001, 2002), Pelleteri (2000) and Tudini (2003) found that learners engaged in negotiation of meaning in SCMC. Smith (2003) reported similar strategy use to face-to-face environments and found that the task type had no significant effect on strategy use. He found a high use of abbreviations, fillers and politeness strategies. He also reports that the use of abbreviations could have been used to reduce the likelihood of making mistakes, although other authors point that this strategy is used to keep up with the fast-paced interaction generated in text-based SCMC (Werry, 1996; Cherny, 1995; Murray, 2000).

Several researchers have studied the discourse functions in text-based CMC and have found a high number of discourse management strategies during synchronous text-chat interaction (Chun, 1994; Negretti, 1999, Sotillo, 2000). Furthermore, Sotillo (2000) found that learners produced more informal discourse and used a wider variety of discourse functions when they engaged in synchronous CMC than in asynchronous CMC. Some of the discourse functions that she identified were: greetings, off topic chat, humor, request for information, or corrective moves. Interestingly, Chun (1994) found that learners took on more classroom management discourse such as task-management or group-management discourse, than in face-to-face settings. She also reported the presence of greetings and leave takings in her data to demonstrate sociability.

Condon & Cech (2010) made a comparative study of the discourse management strategies used in three different modalities: face-to-face interaction, synchronous CMC and asynchronous CMC. They found that more explicit discourse management strategies were used in CMC contexts. They also pointed out that both CMC contexts needed to use strategies to manage the medium of message transmission, whereas this strategy is inexistent in face-to-face settings. This confirms Cunningham, Fägersten & Holmsten (2010) report who also found that participants used meta-modal discourse to deal with breakdowns or disruptions to the interaction and described meta-modal discourse as an important feature in online interaction.

Some studies focus on features present in online discourse that have an effect in online communication. One of the first studies concerning online discourse is by Werry (1996), who described the discourse generated in Internet Relay Chat (IRC). He found several features such as addressivity, which was a common strategy in this environment. Addressivity has been reported to compensate for the lack of visual cues, the disruptive turn adjacency and as a strategy for tracking other interlocutor's messages (Herring, 2001; Peterson, 2008; Werry, 1996). Werry (1996) stated that in IRC, the link between the interlocutors is weakened by the absence of non-verbal cues and addressivity is a strategy to strengthen the link.

Other studies report findings concerning strategies to compensate for the lack of paralinguistic or non-verbal feedback cues. Negretti (1999) found that learners used a range of paralinguistic features such as uppercase and emoticons that emulated the paralinguistic devices in face-to-face conversations. Lee (2001, 2002) also reports the use of emoticons and special punctuation to compensate for the lack of non-verbal cues in this environment. Another feature found in SCMC is the presence of backchannels. Cherny (1995) studied the use of backchannels in a Multi-User Dungeon (MUD) and found a high presence of backchannels, even during periods of low utterance counts. This finding leads her to conclude that backchannels are not only used as an indicator for understanding or attention to their interlocutor, but also as a signal of readiness or presence to initiate an interaction with a potential interlocutor. Emoted actions, verbal descriptions of a non-verbal or paralinguistic action such as 'kiss', have also been reported to signal presence and compensate for the lack of paralinguistic cues (Cherny, 1995; Werry, 1996).

A number of studies have identified strategies used in online environments to build online communities, create a positive environment or maintain social relationships. Rourke, Andreson, Garrison & Archer (1999) measured social presence in online conferences by using three categories for social presence: (a) affective responses (emotion, humor); (b) interactive responses (continuing a thread, quoting) and (c) cohesive responses (using 'we' or 'us'). Similarly, Lapadat (2007)

identified thirteen discourse devices that promoted the development of community in an asynchronous online conference. These devices included greetings, outside social, colloquialisms, social remarks, praise and encouragement, humor, and inclusive language.

In order to maintain social relationships in a community, both positive and negative politeness strategies are important (Goffman, 1963; Brown & Levinson, 1983). Morand & Ocker (2003) study how politeness theory shapes the relations in CMC and outline positive and negative politeness indicators. Theses indicators include the use of in-group names, inclusive forms, praise and colloquialisms for positive politeness and apologies, minimizers or hedges for negative politeness. Darhower (2002) explored the interactive features in text-based SCMC used to achieve social cohesiveness and found evidence of intersubjectivity, off-task chat, humor, greetings and leave takings and use of the L1. Collentine (2009) reports similar results in the study of two multimodal task-based SCMC activities. She found that the discourse was rich in social functions such as humor as well as interpersonal discourse.

2.3.6.2. Communication and discourse strategies in avatar-based environments.

There is a growing body of research concerning the use of strategies to communicate in avatar-based environments (Gowans, 2011; Naper, 2011; Örnberg, 2005; Peterson, 2001, 2005, 2006, 2008, 2010)

Gowans (2011) studied the communication strategies used among learners and teachers in *Second Life*. She found that fillers and indications of laughter were consciously employed in text chat, as a strategy for indicating presence, involvement, and interest without needing to expand their contribution by using a longer turn. She also highlights self-repetition as one of the most frequently used strategies, especially in oral communication. This strategy was used as a filler, to restructure an utterance, or to clarify important points. Politeness strategies had a high density in her data.

There is a body of literature that shows that SL breaks down the traditional hierarchical class behavior, associated with teacher led lessons. However, Gowans' research shows that although the

lesson was designed under a constructivist approach, the students' behavior in the virtual setting was that of a traditional classroom setting. Her research also shows there were no significant results as regards the use of paralinguistic or non-verbal strategies such as emoticons or gestures. She offers a possible explanation that users have enough with the voice, text chat and visual affordances that *Second Life* offers.

Peterson (2008) found that participants in the MUVE of *Active Worlds* used a combination of discourse management strategies transferred from face-to-face settings as well as adaptive behaviors to online settings such as addressivity. The most frequent interactional strategy was the use of language routines. He ventures several possible explanations such as the fact that *Active Worlds* is text and avatar-based and lacks intonation and many paralinguistic features, thus, the use of politeness is important to avoid misunderstandings. Peterson observes that some participants used the communicative features of their avatars while others did not. Those who did not provided several reasons: they were too busy trying to keep track of the interaction happening in the world, they had limited typing skills, the features were too limited or they had enough with moving their avatars in the world. He notes that there was a low occurrence of negotiation strategies as a whole, he suggests that this fact could be because of the use of avoidance strategies as well as difficulties to keep up with the rapid interaction.

Naper (2011) found visual addressivity as a trait of communication in 3D MUVEs. She described how the placing of avatars in the world was used to make the addressee of the message explicit. She discusses how participants use the different modes of communication when interacting a virtual world and how the multimodal resources carry interactional meaning. Her findings follow those of Krikorian, Lee, Chock & Harms (2000), who also report that the distance between participants is meaningful in a virtual computer-mediated environment.

2.3.7. Teacher discourse.

The rationale behind the study of teacher discourse is that it provides a closer understanding on how classroom interaction works and how teacher discourse can be improved and made more effective for learning. Walsh (2006) argues that both teachers and learners need to acquire 'classroom interactional competence (CIC)', which he defines as the "ability to use interaction as a tool for mediating and assisting learning" (Walsh, 2011, p.158). It is difficult to understand the complexities underlying the classroom, by studying the communication that takes place in this context; we start to gain knowledge of what is happening in the classroom. Communication encompasses everything that happens in classroom as it includes interaction, teaching, learning, managing students, organizing resources, etc. (Walsh, 2012). CIC places interaction as the focal point of the teaching and learning process, the aim is for learners to become 'better interactants', rather than focus on individual accuracy or fluency (Walsh, 2012, p.2). An essential concept in CIC is 'space', teachers need to provide interactional space to learners so that they can learn how to participate in discourse. This space, is provided by extending waiting time and by 'shaping' the learner's contribution through interactional modifications such as recasts or clarification requests (Walsh, 2011).

This section will focus on two aspects of teacher discourse: teacher interactional modifications, and corrective feedback.

2.3.7.1. Teacher modifications.

One of the main features in classroom discourse concern the input modification strategies the teachers use with their learners. These modifications that the teacher uses in the classroom are known as 'teacher talk'. Teacher talk has been identified by numerous researchers a type of discourse typical of the foreign language class that has its own features and which is very similar to foreigner talk or *motherese* (Chaudron, 1988; Ellis, 1985). The aim behind these modifications is to

make the teacher's input comprehensible to learners, and to ensure that students are following the class (Lynch, 1996; Walsh, 2012).

Lynch (1996, p. 57-58) outlines three reasons for the study of teacher language modifications:

a) There is a link between comprehension and progress, i.e., if students do not understand the teacher's input, they are unlikely to progress.
b) Teacher language has an influence on learner language, as teachers use their input to model the target language.
c) Learners have difficulties to understand the target language and without teacher simplification, they will have trouble to understand.

Several authors have conducted studies on teacher speech modifications. Chaudron (1988) found that teachers modified four aspects of their speech. The first aspect is vocabulary, they use simplified vocabulary and avoid idiomatic expressions; the second aspect are grammar modifications, where teachers produce shorter and simpler sentences; the third modification is pronunciation, teachers use a slower pace when they speak to learners; the last aspect is related to gestures. However, these speech modifications that Chaudron found, resemble the features identified in *motherese* (Walsh, 2006); moreover, he does not identify any features at the discursive or interactional level, which are relevant in teacher talk (Long, 1983b).

2.3.7.1.1. Teacher interactional modifications.

There are two broad types of teacher speech modifications: input modifications and interactional modifications (Ellis, 1985; Long, 1983b; Larsen-Freeman & Long, 1991). Input modifications occur when teachers slow down their speech rate and prosody, make phonological adjustments, simplify their vocabulary or make modifications of syntax. However, teachers also modify their speech at a discourse and interactional level to check that students are following and to help them understand. Long (1983b) states that interaction provides opportunities for negotiation of meaning and thus allows for input modification to achieve mutual understanding.

Long (1983b) identified six types of interactional modifications that native speakers engaged in when addressing non-native speakers that have been widely used in research when studying foreigner talk: confirmation and comprehension checks, clarification requests, self-repetitions, other-repetitions, and expansions. Other researchers have studied the interactional modifications that teachers use in the language classroom. Ellis (1985) conducted a study on teacher talk and found that teacher also used similar interactional modifications to foreigner talk such as comprehension and confirmation checks and clarification requests. Walsh (2012) adds backchanneling as an important teacher strategy because the teacher can indicate to the learners that they are being understood and that the teacher is following what is being said.

Tardiff (1994) found that teachers modified their discourse through the use of five strategies: self-repetition, linguistic modeling, providing information, expanding an utterance and elicitation. Each strategy has a specific discursive function. Tardiff (1994), corroborating Long & Sato (1983), found that the most frequently used modification strategies were expansion and questions.

Similarly, Lynch (1996) identifies several strategies through which teachers modify their interaction which include questioning strategies such as confirmation and comprehension checks, repetition, clarification requests, as well as reformulation. For example, teachers use frequent comprehension checks, to make sure they are being understood, and self-repetitions or self-reformulations to help learners understand. On the other hand, teachers often engage in frequent clarification or confirmation checks to make sure they understand the learners' intended meaning. This study has focused on the teacher's interactional modification strategies outlined by Lynch (1996).

There has been a shift in research from input to interactional modifications when studying teacher discourse as interactional modifications have been reported to be more effective than input modifications alone to improve learner comprehension (Lynch, 1996). Furthermore, it is important

that teacher modification strategies be studied as conscious interactional strategies linked to the teacher's pedagogic purpose (Walsh, 2006).

2.3.7.2. Corrective feedback

From a classroom interactional competence (CIC) lens, teachers shape the learner's contributions through interactional devices such as rephrasing, seeking clarification, modeling and repairing (Walsh, 2012).

There are different views regarding repair or corrective feedback, too much affects the flow of classroom communication, but a certain degree of error correction is necessary for learning. Teachers need to find a balance and decide how often and what they want to focus their corrective feedback on, depending on their teaching goals (Walsh, 2012). Van Lier (1994) argues that repair in informal contexts should consider three factors: intelligibility, conversational rhythm and face. In classroom contexts, he adds the pedagogical factor.

Corrective feedback can be explicit or implicit. Explicit or overt corrective feedback implies openly signaling and correcting the error. Direct error correction is a fast and efficient way of correcting an error, however, it can interrupt the flow of interaction and can be more face threatening to students than covert corrective feedback. On the other side of the spectrum, a teacher can provide corrective feedback through covert or implicit strategies.

Sotillo (2005) classifies corrective feedback into two groups: direct and indirect. In direct feedback she considers explicit feedback, either explicit correction or metalinguistic explanation. Regarding indirect feedback, she includes recasts, repetitions, clarification requests and confirmation checks. Similarly, Morris (2005) uses three categories for corrective feedback: explicit correction, recasts and negotiation of form.

Bower & Kawaguchi (2011) focus their study on implicit corrective feedback and identify the following strategies:

a) Recasts

b) Negotiation strategies (Oliver, 1995 cited in Bower & Kawaguchi, 2011): clarification requests, repetition, confirmation and comprehension checks

The abovementioned researchers provide very similar classifications concerning implicit feedback, they all include recasts and negotiation strategies. Recasts have the advantages of being less intrusive and face-saving as well as not interrupting the flow of the interaction, as recasts are incorporated to the interaction. However, they are more time-consuming than explicit error correction. Negotiation strategies do not offer learners the correct form, but indicate that there is a problem that needs repair. Furthermore, negotiation strategies such as clarification requests can push the student to reformulate his output (Bower & Kawaguchi, 2011). Through confirmation checks, the interlocutor checks if he has understood the learner's utterance, and comprehension checks are used by the sender to make sure that the learner is following. By using these strategies, the teacher and the student are working together and actively towards dealing with non-target like forms of learner output.

Many researchers have studied what triggers corrective feedback. Blake (2000) studied the interaction among foreign language learners occurring in a synchronous CMC environment and found that lexical problems, rather than morphological or syntactic, triggered most instances of negotiation. Similarly, Smith (2003) and Tudini (2003) studied the negotiation strategies used by learners in a synchronous online environment and found that lexical confusion was the main trigger of negotiation.

Bower & Kawaguchi (2011) studied the tandem synchronous and asynchronous interactions of learners of English and Japanese. They divided instances of negotiation into two categories: negotiation related to errors or not related to errors. They found that the English sessions recorded a 0.6% rate of negotiation related to errors and a 6.6% of negotiation unrelated to errors, whereas the ratio for the Japanese session was 3.3% to 16.7%. Therefore, negotiation unrelated to language

errors was much more frequent than negotiation triggered by errors. Although they report a low rate of corrective feedback, most of the instances of corrective feedback were acknowledged or led to modified output or self-correction.

Morris (2005) studied the corrective feedback In CMC child-to-child interaction. He found that the errors that triggered corrective feedback were mostly lexical, syntactic and L1 errors. Learners repaired over 60% of the instances that received corrective feedback, the most common form of feedback being negotiation. On the other hand, recasts did not trigger repair. He concludes that negotiations are the strategies that promote learner repair.

Sotillo (2005) studied NS-NNS and NNS-NNS dyads in interaction through Instant Messaging. She classified the student reaction to corrective feedback in uptake or learner acknowledgement, when the learner gives a general response to the corrective feedback, no uptake or topic continuation, and successful uptake. She found that NNS partners provided mostly explicit corrective feedback to the ESL learners, while the NS partners provided mainly implicit corrective feedback. The non-target like forms that triggered more corrective feedback from the NNS-NNS dyads was grammar, while the NS-NNS dyads focused more on vocabulary. Regarding learner uptake, out of the 32 occurrences of learner response, 75% of the instances ended in successful uptake. However, 51% of the total instances of corrective feedback was not acknowledged.

2.4. Multimodality

Western society has long considered written and oral discourse as the basic means of meaning representation. Kress & van Leeuwen (2001) challenge disciplines that envision communication as a ‘purely linguistic event’ (p. 42) and argue that there has been a ‘dominance of writing as the means of communication and representation’ (Kress, 1998, p. 58). Although there have always been other modes involved in communication, this logo-centrism has often made other modes more invisible.

Linguistic research has been traditionally monomodal, focusing mostly on written communication and later including spoken discourse. Linguistics has generally not given enough importance to elements that are involved in a communication event such as gestures or distance between participants in the event (Poyatos, 1992). These elements have a vital role in communication and it is difficult to understand a communicative event without taking them into consideration (Poyatos, 1992; Kress, 1998; Kress & van Leeuwen 2001).

Currently, other semiotic modes, in particular the visual mode, are gaining more relevance in today's society. As can be seen in many texts produced today, written language is not the main mode of representation anymore, the written mode coexists with other modes. Adopting a multimodal approach means that studying written or oral discourse is not enough anymore; the researcher must take into account the different modes that produce meaning in the text and how the different modes are combined. Thus, according to the multimodal approach, the meaning of a communicative event can only be grasped taking into account the different modes that are present.

Kress and van Leeuwen (2001) define multimodality as "the use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined – they may for instance reinforce each other […], fulfill complementary roles […] or [be] hierarchically ordered" (p. 20).

A mode is 'a socially shaped and culturally given semiotic resource for making meaning. Image, writing, layout, music, gesture, speech, moving image, soundtrack and 3D objects are examples of modes used in representation and communication' (Kress & van Leeuwen, 2001, p.79). Each mode has different 'meaning potentials' and this will affect the choice of modes in specific communication events (Kress & van Leeuwen, 2001).

It is important to point out that multimodality is not something new. All interactions and texts are multimodal. Multimodality refers to series of modes of representation and communication that are involved in the meaning-creation process. To illustrate this, Norris (2004) sets the example

of having a conversation with a friend. The speaker is aware of the interlocutor's spoken language, which includes content, prosody and pitch. The speaker is also aware of the gestures the interlocutor makes, the facial expression, where the conversation takes place, or the background music. All of these elements play a part in this communicative event.

Mutimodality *per se* is not considered a theory, but a 'field of application' (Bezemer & Jewitt, 2010) or 'field of work' (Kress & van Leeuwen, 2001). There are several disciplines and theories that explore multimodality; the two main approaches to multimodality are the socio-linguistic approach and the socio-semiotic approach, which will be described in the following sections.

2.4.1. Socio-linguistic approach to multimodality

Sociolinguistics studies the social and situated use of language. Sociolinguistics is a broad interdisciplinary field that includes different methods and disciplines such as ethnography of communication, conversation analysis, discourse analysis and pragmatics (Coupland & Jaworski, 1997).

The interest for multimodality in sociolinguistics owes its presence to the use of tools of data collection such as video recordings used in qualitative research to study human behavior and communication (Knoblauch et al, 2006 cited in Benzemer & Jewitt, 2010). Thus, the possibility of video recording human behavior and communication has brought researchers' attention to other modes such as body language, gesture and gaze.

Most of these studies assume that speech or writing are the dominant modes, carrying the main meaning and acknowledge other modes as carrying additional information to the communicative event. This assumption is reflected in the terminology used in the linguistic and sociolinguistic fields, as the other modes are referred to as 'non-verbal' or 'paralinguistic' or 'context'. This illustrates this notion of essential modes and complementary or contextual modes (Benzamer & Jewitt, 2010).

Acccording to Benzemer & Jewitt (2010), 'non-verbal' modes have been accounted for in three different ways within the sociolinguistic approach. In some studies, paralinguistic signs or 'non-verbal' behaviors have been considered contextual or placed beyond the scope of the analysis (Gumperz, 1999). Other studies give significance to particular modes or non-verbal elements and transcribe them with speech or writing. A third group of studies consider the range of different modes and study their potentials and constraints, these studies move closer to socio-semiotic perspective (Goodwin, 2000; Scollon and Scollon, 2003).

Although the written and spoken mode have ceased to be the only modes which are the object of study and other modes have attracted the attention of sociolinguistic research, the core units of analysis are usually linguistic.

2.4.2. Multimodal Social Semiotic Approach to multimodality.

The multimodal social semiotic approach intends to explore what meanings, apart from speech and writing, societies use or create, what their potentials of representation are, and how they are developed in different societies, cultures and contexts (Kress, 2009).

Multimodal social semiotics encompasses two concepts, social semiotics and multimodality. Social semiotics deals with meaning making and multimodality deals with the different means for meaning making, called modes. The label 'social' in 'social semiotics' is used by Kress & van Leeuwen (2001) to stress that 'signs' are always newly made in social interaction and become part of the semiotic resources of a specific culture.

According to Benzemer and Jewitt (2010), this approach is based on three tenets:

> *'First, social semiotics assumes that representation and communication always draw on a multiplicity of modes, all of which contribute to meaning. […] Second, multimodality assumes that all forms of communication (modes) have, like language, been shaped through their cultural, historical and social uses to realize social functions. […] Third, the meanings realized by any mode are always interwoven with the meanings made with those other*

modes co-present and co-operating in the communicative event. This interaction produces meaning.' (p. 4-5)

As we can see in this definition, this approach focuses on the multiplicity of modes, on the fact that these modes are culturally and socially shaped and on the fact that the modes are co-dependent in the process of meaning making. It is the inter-relationship of modes what produces meaning.

The concept of 'semiotic resource' comes from Halliday's systemic functional theory. He argues that the grammar of a language is not a code, it is not a set of rules for producing correct sentences, but a 'resource for making meanings' (Halliday 1978, p. 92). Halliday formulated his systemic functional theory to shed light on the different semiotic resources involved in the creation of meaning (O'Halloran, 2004).

Halliday's systemic functional theory has been extended to semiotic resources that include visual images (Kress and van Leeuwen, 2006), music and sound (van Leeuwen, 1999), movement and gestures (Martinec, 2000, 2001) and space (O'Toole, 1994). These authors, who have developed Halliday's view, see language as a complex system made up of different semiotic resources (written, visual, spoken, bodily). Thus, according to Kress, language is made up of 'independent meaning-making systems, which are however coordinated so as to produce a single, if complex, integrated and differentiated message' (Kress, 2000b: 186).

Multimodal meaning making provides insights that are not present in representations in speech or writing alone. Kress (2010) describes a science lesson, in which a teacher has drawn an image on the board to illustrate blood circulation and uses her diagram in her explanation. Kress describes this as an event that has a stable background (the image) and there are different modes that are foregrounded during the class, sometimes it is speech, sometimes it is gesture. In his example, he proves that speech or writing are not enough to understand the communication event,

gestures and images are also needed as well as understanding how these different modes are orchestrated.

The socio-semiotic approach to multimodal research is similar to socio-linguistic ethnographic procedures, but they differ in the focus on meaning resources and the way modes are used to represent the world. (Bezemer and Jewitt, 2010).

Adopting a multimodal sociosemiotic approach means accepting that meaning is created by actors through different modes and understanding that non-verbal modes are not less important than verbal modes, the importance or relevance of each mode depends on each communication event.

This study has adopted the socio-semiotic approach, as other modes that are not linguistic are considered essential when analyzing and attempting to understand interaction produced in a graphic 3D MUVE. These modes have to be studied to understand the idiosyncrasies of communication in a graphic environment.

2.4.2.1. Terminology.

O'Halloran (2011) defines 'semiotic resource' as "the resources or modes (e.g. language, image, music, gesture and architecture) which integrate sensory modalities (e.g. visual, auditory, tactile, olfactory, gustatory, kinesthetic) in multimodal texts, discourses and events, collectively called multimodal phenomena" (p. 120).

Kress and van Leeuwen (2001) suggest a new terminology for the semiotic description:

- Medium: refers to the means through which the multimodal phenomena materialize (e.g. newspaper, computer, television…)
- Mode: it refers to the channel of representation or communication, formed differently by each culture and organized socially. Each mode has meaning potentials (speech, writing, gestures…) and rules and regularities attached to it.
- Materiality: it is a central characteristic of each medium. Each mode has its potentialities and limitations based on the materiality of the medium.

- Semiotic orchestration: it corresponds to the semiotic configuration of one or various of the semiotic modes, through this configuration emerges multimodal meaning.

Each mode has potential meaning representations that will not be 'realized' until they are used in a specific communication event. In a communicative event, each mode can give some insight on meaning, however its meaning will be partial and dependent on the rest of the modes in the communicative event. There are many studies that demonstrate how modes are dependent on the mode of language; however, spoken language is not always the central mode in a communicative event (Norris, 2004).

Norris (2004, p. 13-15) suggests the 'mediated action' or simply 'action' (because every action is mediated) as the unit of multimodal analysis. She describes different type of actions:

- Higher level actions: refer to the communication event itself (e.g. a meeting). A higher-level action encompasses chains of lower-level actions.
- Lower-level actions: refer to all the units that an individual performs (e.g. intonation unit, gesture unit, gaze...)
- Frozen actions: they are usually higher-level actions that were performed before the real-time moment of interaction. These actions are frozen in the material objects themselves. (e.g. a magazine lying on a table)

2.4.3. Multimodal CMC

The previous sections described how communication is comprised of several modalities such as speech, gestures and movement. It is difficult to avoid making gestures while talking to someone, so the advent of multimodal online communication tools are very promising to richen the interaction experience as well as provide foreign language learners with more tools that they can use when communicating in the target language. Herring (2015) illustrates the different possibilities available in multimodal CMC in *Figure 7*.

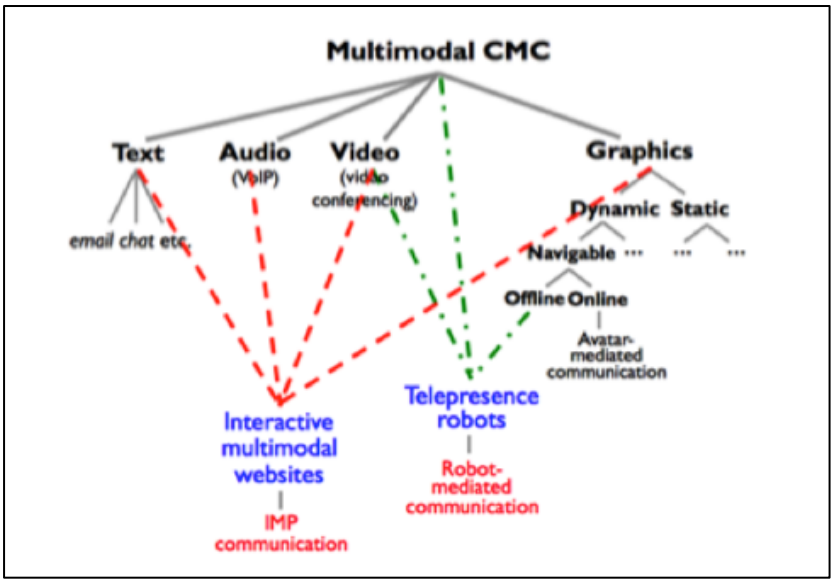


Figure 7. Multimodal computer-mediated communication (Herring, 2015, p. 398)

According to figure 7, virtual worlds fall into the graphic-based multimodal CMC category and Herring describes the communication that occurs in virtual worlds as "avatar-mediated communication". However, communication in MUVEs such as *Second Life* is not only graphic-based, as it can also contain text, audio and video features. The modal features of *Second Life* will be presented in the following chapter.

Within CMC, a 'mode' is a distinct channel of communication enabled by technology; these channels can be synchronous or asynchronous. The term 'multimodal CMC' has two interpretations in CMC literature. The first interpretation is that mutimodal CMC refers to the deliberate and non-simultaneous use of multiple formats, thus different modes of communication can be used towards different communicative goals (Kollock & Smith, 1996; Xie, 2008). For instance, some researchers have studied the use of different modes of communication and their suitability for different social functions (Xie, 2008). The second interpretation is that multimodal CMC refers to the use of different modes of communication available to the user in a virtual environment (Herring, 2002). The study of this thesis has been guided by the second definition for multimodal CMC.

Chun and Plass (2000) argue that there are still few studies that have focused on environments that allow learners to use a different range of mutimodal tools, so researchers still

need to look into the possibilities and constraints of mutimodal CMC environments. Similarly, Hampel states that 'our practice is often characterized by trial and error, with a 'culture' only slowly developing and research is all the more important.' (2006, p. 7).

Most studies on synchronous CMC focus on text-based chat. However, there is a growing body of multimodal CMC tools that have the potential of creating richer learning experiences. Spiro, Feltovich, Jacobson & Coulson (1992) provide a word of caution for multimodal learning experiences and state that tasks should be well structured to avoid a feeling of overload by learners. Other researchers have reported the need to give learners technical and pragmatic training in choice of modes so as to increase their communicative competence (Chun & Plass, 2000: Hampel & Hauck, 2004; Kress & van Leeuwen, 2001). However, the availability of a wide range of communicative channels can potentially overwhelm learners due to technical demands and produce technical and pragmatic communicative breakdowns (Cunningham et al, 2010).

2.4.3.1. Research in multimodal CMC

It is easy to take for granted the array of communication modalities and focus solely on oral or written discourse. However, it is important to research how the different modalities are interrelated and used in communication. Understanding how the different modalities are put into play can help us gain better understanding of communication and meaning making in a multimodal environment. There is limited research on how these communication modalities are used, what their level of (inter)dependence toward other modalities is, and if they can be substituted or are used as complementary modalities (Hampel & Hauck, 2006).

There are several studies of negotiation of meaning in multimodal CMC. Jepson (2005) compares the patterns of repair in synchronous text and voice CMC. He found that voice chat generated more negotiation of meaning repair moves than the text chat. Blake (2005) reports how an instructor and his student make use of bimodal, text and voice, CMC and how the combination promotes negotiation of meaning as well as other affective benefits that compensate for the lack of

physical presence. He points out that the interest in bimodal CMC environments does not lie in the capabilities of the tool, but in how the instructor combines the modes in order to promote negotiation and engagement.

Deutshmann and Panichi (2009) designed a study in *Second Life* to study the affordances of *Second Life* for language learning and discover what practical issues are involved when using *Second Life*. They suggest that the physical dimension of *Second Life* can compensate for the physical dimension present in face-to-face contexts, which other online environments lack. However, they found that some learners found the multiplicity of verbal communication channels hard to manage. Nevertheless, they point out that the text chat can be a good medium for unobtrusive feedback.

Cunningham et al. (2010) described a study of three videoconference interactions. The study focused on how information was conveyed using the different modes of communication available in the videoconference environment and how meta-modal discourse was used. They reported that participants successfully managed multimodal interaction by using meta-modal discourse. Through this kind of discourse they dealt with technical problems or used other pragmatic strategies like addressivity or alluding to what they could hear or see in other channels (microphone, speaker, video, whiteboard or text chat). They found that meta-modal discourse was a 'direct response to breakdowns in or disruptions to the interaction' and was an important strategy to manage multimodal communications successfully (Cunningham et al., 2010). They concluded that the multi-channel environment triggered more communication problems but at the same time offered alternatives to compensate for these problems.

Gowans' (2011) research shows interesting results in the use of text and voice modalities. She stated that participants used text chat for different purposes. She found that text chat not only supported noticing and consciousness-raising like research in text CMC states, but text chat also helped organize participation and social presence during discussion. Text chat provided a means of

participating and indicating presence and involvement without interfering with the speaker's turn. This strategy shows that the users adapted to the new multimodal environment.

There is a small but growing number of researchers who report the relevance of the visual mode in multimodal CMC concerning virtual worlds. Örnberg (2005), for example, explored how participants used the different modes (audible, visual and spatial) available in the virtual world *Traveler*. She found that the audible mode had a higher density in her study. She also found that spatiality was more relevant than the visual mode, for example, users tended to form circles when they were interacting in a group and they used spatial cues to indicate they were paying attention; thus, this mode was seen as important for interaction. She also reported a lack of combined use of different modes. A possible reason for the lack of complexity and higher presence of audible modes could be because the visual and spatial modes depended on deliberate actions by the user, thus users have to grow used to and internalize these signals to incorporate them in their communicative behavior. Naper (2011) also explored participants' use of different modes and their meaning potential in the 3D virtual world of *Patagoni*a. She found that addressivity was managed not only through the verbal mode, but also through the visual mode, showing how the visual mode also carried interactional meaning and arguing for a multimodal approach to the study of virtual worlds that takes into account the visual mode. A third study regarding non-verbal communication is Wigham's (2013), who explored the use of verbal and nonverbal communication modes in a CLIL class during collaborative building activities in *Second Life*. She found that the verbal and non-verbal modes were inter-related as participants used non-verbal communication such as deictic gestures to avoid ambiguities in the verbal mode. However, she found different results to Örnberg's regarding proxemics behavior, as she reports that proxemic norms from real life contexts weren't transferred in world, i.e., avatars did not naturally face each other or form circles in group activities.

Hampel & Stickler (2012) studied the interplay of modes in FlashMeeting, a multimodal virtual environment for language learning. They found that the different modes in this environment

shaped interaction and they illustrated how the teachers and students used different verbal modes in combination. They reported that the text mode was used in a complementary, compensatory and competing manner regarding the oral channel.

Wang, Deutschmann & Steinvall (2013) explored voice and text participation in *Second Life*. They found that participation tended to be equalized in these channels; participants who had been particularly active in the voice channel were less active in the text channel and vice versa. They also noted a lack of active participation as there were large intervals of silence.

There is a wide range of online multimodal tools for communication, each tool uses a number of different modes, some favor the text mode, others the audio and others the visual mode. Some virtual worlds such as *Second Life* include both audio and written modes of communication. However, most CMC studies are based on the written mode. Peterson (2008), for example, based his research on text-based communication in a MOO. However, there is an increasing number of studies on multimodal environments which take into account the multiplicity of modes (Wigham, 2012). Wang et al. (2013), for example, focused on the oral and written modalities in *Second Life*.

Finally, it should be noted that CMC should not be compared to face-to-face settings. If compared to face-to-face settings, it may seem restricted due to missing body language. Each tool has its own semiotic modes, which have their own grammar and affordances. As Salaberry (2000) argues, “the medium of communication does not appear to impair interaction, but rather seems to create a new environment with different features for the exchange and creation of information” (p. 33). Thus, each multimodal tool has its own representational resources and communication potentials, and this fact offers exciting possibilities for multimodal interaction and language learning.

Chapter 3: Virtual Worlds

Figure 8. Snapshot of the first class in *Second Life*.

This chapter is comprised of two parts. The first part provides a definition of the broad concept of virtual worlds and sets them apart from other online environments. This first section includes a brief history of virtual worlds to gain some understanding about where they come from and how their features have evolved through time. It follows with an overview of the different types of virtual worlds and how they have been used in education and language learning. The second part of this chapter will provide a description of *Second Life*, the virtual world that was chosen for this study.

3.1. Definition of virtual worlds

Although virtual worlds have existed since the early 80s, it is difficult to find an agreed definition for this term as virtual worlds have evolved greatly since their birth. Warburton (2009) outlines the following defining traits: 'synchronicity, persistence, network of people, avatar representation and facilitation of the experience by networked computers' (p. 415). Synchronicity, a well-known concept in CMC, refers to participants being online at the same time and sending messages to each other in real time; persistence refers to the fact that the virtual world still exists and develops when the participants are offline; people can participate and interact with other users of the virtual world; and users are represented in a virtual world by an avatar. Furthermore, a defining and characteristic trait is that virtual worlds provide the user with a sense of being or of presence in the virtual environment (Schroeder, 20008; Smart, Cascio & Paffendorf, 2007; Sweeney et al, 2010; Warburton, 2009).

Clark Aldrich (2009) sees virtual worlds, games and educational simulations as points along the same continuum. They are all considered highly interactive virtual environments (HIVEs) and they are all set in 3D contexts with 3D avatars, but they differ in their purposes. Educational simulations are structured scenarios with carefully designed rules, challenges and strategies aimed to develop specific competencies that can be directly transferred into the real world. Games, in contrast, are not as defined as simulations, but they often focus on a particular goal such as advancing to the next level. Finally, virtual worlds are not goal-focused like games. Aldrich states that a virtual world offers context with no content. An educational simulation may take place in a virtual world, but it needs to be designed beforehand (Ulicsak & Wright, 2010, p. 17).

According to this distinction, *Second Life* is a virtual world, as it meets Warburton's (2009) features, but it cannot be considered a game because it lacks game features such as a narrative, goals, rules and clear outcomes and it is not a simulation in itself because it has no pre-defined structure or content. However, virtual worlds such as *Second Life* can offer the context for a

simulation to take place in. Figure 9 shows Aldrich's (2009) HIVE continuum, placing virtual worlds in the outer layer, which encompasses games and educational simulations.

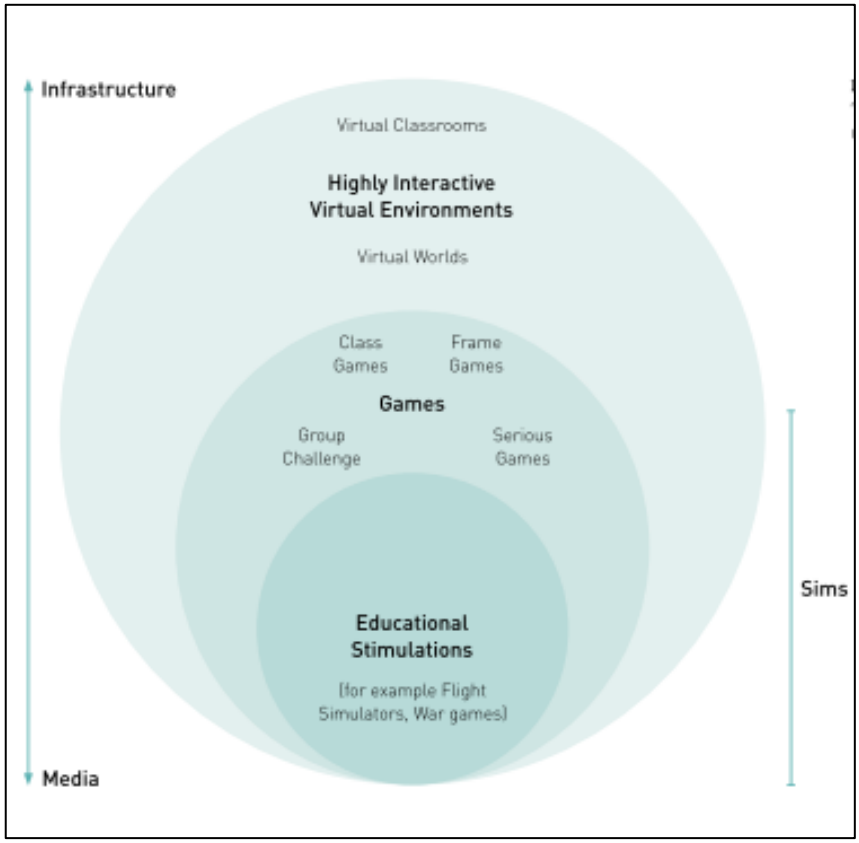


Figure 9. Aldrich's HIVE continuum (Ulicsak & Wright, 2010, p. 18)

3.2. History of virtual worlds

Virtual worlds find their roots in MUDs (Multi User Dungeon), MOO[1]s (MUD Object Oriented), and MMOs (Massively Multi-player Online games)[2]. Downey (2014) offers a view of virtual worlds across three generations that helps understand how virtual worlds have evolved throughout time.

[1] https://en.wikipedia.org/wiki/MOO

[2] See Appendix A for a glossary of the main types of virtual worlds.

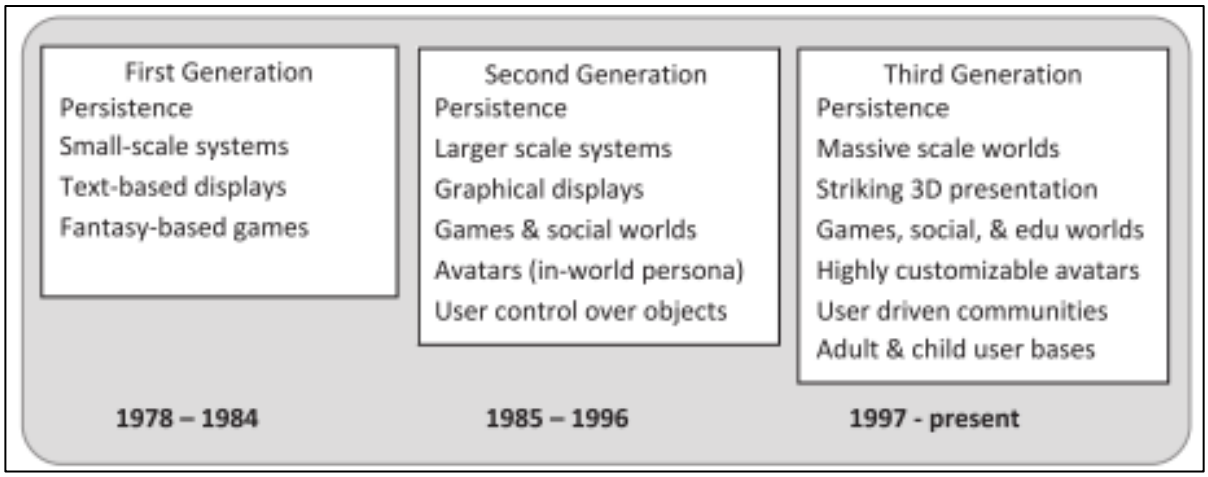


Figure 10. Generational traits of virtual worlds (Downey, 2014, p. 57)

We can observe in figure 10 that the first generation of virtual worlds, also known as MUDs, were text-based and had few users. An example of a first generation virtual world is *Zork,* a MUD developed by Roy Trubshaw in 1978. *Zork* is considered the first virtual world, as it was the first major simulation available over a network (Downey, 2014).

After MUDs, the next major development was the MOO. MOOs are virtual social environments in which participants meet and interact with each other or with the environment (Levy & Stockwell, 2006). MOOs are considered second-generation virtual worlds (Downey, 2014) and were initially designed for online gaming and role-playing. Most MOO environments are constructed solely through text, although some do have some graphical representation, and allow their participants to socialize. However, they are different from other text-based environments such as chats. In chats, for example, users log into a pre-existing chat room that they cannot leave and interact with other participants, whereas in MOOs, participants play an active role in building an environment through their verbal descriptions. Also, the main aim of the chat is to socialize, whereas in a MOO users not only interact with participants, they are also able to interact with and change the environment and build their own objects.

In the third generation, these text-based environments were further enhanced with 3D technologies to form more complex Multi-User Virtual Environments (MUVEs) such as *Second*

Life and *Active Worlds*[3]. The term 'MUVE' was coined by Harvard researcher Chris Dede to refer to social virtual worlds and differentiate them from gaming virtual worlds, which are also known as MMOG (Massively Multiplayer Online Game) or MMORPG (Massively Multiplayer Online Role Playing Game)[4]. MUVE environments are multi-player, they allow for multiple participants to access a virtual context simultaneously. Participants are represented in the context through an avatar and they can interact with the environment and with objects in the environment as well as communicate with other participants. MUVEs have not only attracted gamers, but also businesses, educators and academic researchers. MUVEs can have one or several verbal channels such as text or voice-chat, but all MUVEs have a 3D graphical environment as a common denominator.

3.3. Features of virtual worlds

Betsy Book (2004) outlines six defining features of virtual worlds in *Figure 11*.

Six Features of Virtual Worlds

1. ***Shared Space:*** the world allows many users to participate at once.

2. ***Graphical User Interface***: the world depicts space visually, ranging in style from 2D "cartoon" imagery to more immersive 3D environments.

3. ***Immediacy:*** interaction takes place in real time.

4. ***Interactivity:*** the world allows users to alter, develop, build, or submit customized content.

5. ***Persistence:*** the world's existence continues regardless of whether individual users are logged in.

6. ***Socialization/Community***: the world allows and encourages the formation of in-world social groups like guilds, clubs, cliques, housemates, neighborhoods, etc.

Figure 11. Six features of virtual worlds (Book, 2004, p.2)

[3] Some authors use the terms MOOs to consider both second and third generation virtual worlds.

[4] See Appendix A for glossary of the main terms related to virtual worlds that have been used in this section

These six features are very similar to the defining features outlined by Smart et al. (2007). However, Book highlights the sense of community, whereas the latter authors focus on the sense of presence the 3D virtual worlds have. Both features are essential and interconnected in *Second Life*, as users have a sense of presence through their avatars and the online space, which can be shared with other avatars, thus helping to create a sense of community.

These six features are common to gaming and social virtual worlds, but it sets them apart from MOOs, which contain all the above characteristics except for the graphical user interface (Book, 2004).

3.4. Virtual worlds: types

Virtual worlds can be categorized in a number of ways. One main categorization is that of text-based or graphic-based.

This study was carried out in a graphic-based voice-enabled MUVE. When analyzing interaction in 3D virtual worlds, it becomes apparent that there are other semiotic modes of meaning representation other than verbal modes, what makes MUVEs different from other online tools is the availability of a visual representation of the environment and the user through 3D graphics.

Other authors differentiate virtual worlds by function and classify them into gaming worlds or social worlds. In Table 3, Warburton (2009) offers a typology of graphic-based 3-D virtual worlds based on their narrative approach and purpose. Virtual worlds can be used for gaming, social, simulation or work purposes. As can be observed in this table, *Second Life* is classified under the social world category as it has no narrative and its primary aim is to socialize with other users.

Table 3.

Typology of 3D virtual worlds (Warburton, 2009, p. 417)

Flexible narrative	*Social world*	*Simulation*	*W*
Games (MMPORGs) and serious games	Social platforms, 3-D chat rooms and virtual world generators	Simulations or reflections of the 'real'	3-D realisati
World of Warcraft *NeverWinter Nights* *Ardcalloch* *Rivercity project*	*Second Life* *Metaplace* *Habbo Hotel* *Sims Online* *vSide*	Distributed Observer NetworkGoogle Earth	*Project Wond* *Olive* *Open Croque*
The world is a setting in which your story or narrative unfolds within the constraints of the rules and goals set by the designers.	The world may have elements of both a fictional and physical world and exists primarily as a place for social interactions to occur.	The world is a close representation of the physical world and governed by the same rules.	The world p workplace collaborat often inclu tools.
You are a character in a role with a defined purpose.	You are an extension of yourself.	You are yourself.	You are you

CSCW, computer-supported collaborative workspace; MMPORG, massively multi-player online role-playing game.

3.4.1. Virtual worlds: Social worlds

Social worlds, as opposed to gaming worlds, are open-ended. Their aim is not to win or get to the next level, the purpose of these worlds is to socialize and interact with other users. Social worlds are also less structured, they do not have a built-in narrative storyline, instead, they provide a theme or setting into which a user can develop activities or events. The themes vary in nature: whereas many popular MMORPGs[5] occur in medieval, fantasy or science fiction settings, many social worlds recreate modern realistic environments. Travel and tourism is a popular theme in many social worlds such as *Active Worlds*, *Second Life* or *There*[6]. Customization of homes and land is also a popular activity in social worlds. Thus, the aim is not only to socialize, but also to buy, rent and build objects. In such worlds, users are encouraged to rent their own space to hold events such as parties, meetings or to even set up a business. Many residents have opened businesses in these social worlds.

This customization that is available to residents has also made recreation of cultural forms such as art galleries or museums possible in *Second Life*. Also, there are interesting immersive experiences that make the participants have a more active role, they can be experiencing what a schizophrenic person sees or hears in the *Virtual Hallucinations Museum* or they can re-enact a movie or a story in a setting which has been recreated in the virtual

---

5 MMORPG are Massively Multiplayer Online Role-Playing Games. These virtual worlds are designed specifically for playing role-playing games, the most well-known being *World of Warcraft*.

6 See Book, Betsy (2004). 'Moving beyond the game: Social Virtual Worlds' for examples of each.

world. In fact, *Machinima*, re-enacting or creating films in a virtual world, has attracted a lot of interest among *Second Life* residents.

3.5. MUVEs in education

Academics from different fields in education have studied 3D virtual worlds such as *Second Life*. MUVEs are especially popular in higher education institutions as there are numerous studies found in this tier of education (Kingsley & Wankel, 2009; Deutschmann & Molka-Danielsen, 2009).

Salmon (2009) points out that *Second Life* is the best online environment for immersive and experiential learning due to its graphic interface and its design capabilities. Thanks to these features, students can obtain practical training by visiting 'off-campus learning locations' (Salmon, 2009, p. 529). For example, medical students can visit a virtual medical center or hotel receptionists in training can practice their skills at a virtual hotel.

Apart from visiting real life recreations, *Second Life* offers the possibility of visiting ancient cultures (Salmon, 2009, p. 529), which benefits history, archeology or art students who have the possibility of recreating or experiencing different cultures. Not only is this world interesting for exploratory learning, students can also create and display their work in *Second Life*. Bani et al. (2009), for example, set up an interdisciplinary telecollaboration project in *SL* where students from King's College in London and the University of Pisa had to design an immersive experience by creating a historical building or object. This project combined different fields of knowledge such as "history, art, 3D modeling, interaction programming and communication with the new media" (p 127).

The concept of 'embodiment' (Cassel, 2001) is an important feature in distance education, present in graphic-based virtual worlds such as *Second Life*. Specifically, its spatial dimension as well as the environment's sense of presence through avatars can be beneficial for telecollaboration experiences or task-based interaction. Yee, Bailenson,

Urbanek, Chang & Merget (2007) and Friedman, Steed and Slater (2007) confirm this sense of presence as they found that social norms of interpersonal distance or spatial behavior transferred from face-to-face contexts to virtual environments. Jaeger and Helgheim (2009) set up a pilot study and used *Second Life* for role-plays in a purchase management class. They found that the SL setting was an improvement of video conferencing for role-play activities because *Second Life* provided environmental and sensory cues, which were important for interpersonal communication and which non-graphic environments lack.

Thus, virtual worlds such as *Second Life* offer promising possibilities for students from different fields in education as they can take part in practical simulations as well as experience or design different kinds of recreations. Furthermore, they can be of particular interest in distance learning courses thanks to their sense of presence.

3.5.1. Language teaching in MUVEs.

Second Life is one of the most popular virtual worlds among educators. It has attracted many language learners and teachers greatly because of three key elements: the synchronous voice feature, the sense of embodiment or presence that users experience through avatars, and its flexible design capability (Sweeney et al. 2010, p. 263).

Despite its many affordances for language learning, some authors have described challenges to take into account when planning and implementing a course in *Second Life*. Molka-Danielsen (2009) describes a case study using *SL* with undergraduate students. She points out that educators must take into consideration technical access issues, teaching approach and design the learning space accordingly. Felix (2003) also warns that despite careful planning, some teachers may find MOOs anarchic and users may find the speed of text scrolling up confusing. She argues that although a tutor may plan the class very thoroughly, there is a degree of uncertainty of the outcome due to the playful nature of the MOO and the sense of anonymity the environment offers to the student.

Wang (2015) studied the teacher roles and discourse functions during the pre- task, task and post-task phases of task-based classes that took place in *Second Life*. She found that the roles of monitor, motivator and language guide were present in all the task phases. She also found that the most prominent roles in the pre-task phase were technical and social, indicating that the teacher has to be ready to provide a positive social learning environment and reduce the negative effect of technical problems at the beginning of the class as well as be prepared to deal with technical problems. Her study shows that teachers change their major roles when they are in a MUVE environment and adapt their roles according to the task phase.

3.5.1.1. Task design in MUVEs.

Although some educators have tried to replicate classroom tasks into virtual worlds, the specific affordances of this learning environment should be considered in task design. In table 4, Sweeney and Palomeque (2010) suggest six principles for MUVE task design based on Chapelle's (2001) framework for CALL tasks:

Table 4

Principles in MUVE task design (Sweeney & Palomeque, 2010)

QUALITIES	QUESTIONS
Language learning potential	Does the task have a communicative potential?
Leaner fit	Is there a balance between feasibility and challenge? Is the task technically feasible for a student who is not proficient in a virtual world?
Meaning focus	Is the learner's attention directed primarily toward the meaning of the language? Does the task make sense in the environment?
Authenticity within the MUVE environment	Is the task embedded in the MUVE environment? Is it immersive? Is it cognitively authentic?
Impact	Will learners get a positive experience from the MUVE task?
Practicality	Does the institution meet the requirements needed? Does the task take longer to set up than actually carry out?

One of the features inherent to task design in a MUVE that is not present in other online environments is the fourth feature in Table 4, authenticity within the MUVE environment. A task needs to make a meaningful use of the environment so as to provide an immersive experience for the learner.

Deutschmann and Panichi (2009, p. 36) present a different classification of *Second Life* tasks according to what *SL* dimension the tasks favors:

- The social/communicative/cognitive dimension: tasks that are based on interaction and knowledge building.
- The affective/creative dimension: tasks that explore artistic expression and identity.
- The spatial/physical dimensions: tasks that use SL as a source of information or that use the SL space for inter-cultural contact.

They point out that tasks in virtual worlds may have more than one dimension. This classification illustrates the affordances that language tasks have in *Second Life*, tasks can build on the social nature of this environment, they can draw on its artistic and playful features, or they can focus on the spatial element if this world, by designing exploratory tasks or engage students in designing and building artifacts.

The spatial dimension mentioned in both classifications plays an essential role when designing tasks for language learning in a MUVE and this dimension should always be present and taken into account in MUVE task design (Sweeney et al, 2010). Sweeney et al (2010) argue that as an embodied environment, it is not the avatars only who are embodied, but the setting itself must also become embodied. Thus, learners should have the possibility of actively engaging with the environment.

Sweeney (2009) outlines some factors that the tasks in *Second Life* should meet (cited from Sweeney et al. 2010, p. 266):

- The setting must have apparent relevance to the task i.e. have some face validity corresponding with the apparent activity to be undertaken.
- The setting must have persistent relevance to the task. It is not enough to situate an activity in a particular context as a backdrop and then make no further use of the surroundings - thus treating it, in effect, as a themed classroom.
- The task design must be clear and relevant so the rationale for situating the activity in this context remains consistent as the activity develops.
- The setting should either map on to general conceptual / cultural / social frameworks of the learners - e.g. a business context should resemble a meeting room they can relate to in order for them to approach the task with a mindset which will allow the real life empathy required to get benefit from an activity OR
- By agreement there is an element of fantasy and the unexpected - not deliberately disorientating - to stimulate creativity and free up students to react in ways they would not ordinarily

We can see that Sweeney (2009) also highlights the spatial dimension and conceives the environment as playing a vital role in task design, as it has to be used meaningfully and not just as a backdrop to an activity. This author also suggests using settings in different ways: the teacher can choose to use settings that the learners can relate to, thus emphasizing the sense of presence or, on the contrary, use the playful nature of the virtual world to create an element of surprise and encourage creativity and positive feelings towards the class.

Although some CMC authors advise that tasks should be well defined and have clear goals to ensure task success (Lee, 2002), Deutschmann, Panichi & Molka-Danielsen (2009) found that students were more engaged with looser frameworks, and with tasks that had a heavy social dimension that relied heavily on interaction, although the outcome of the classes was more unpredictable.

Task-based language teaching (TBLT) is an established approach of communicative language teaching in face-to-face environments (Ellis, 2003; Nunan, 1989; Willis & Willis, 2007) and has also been popular in many reports of language educators who have explored learning experiences in *Second Life*. Sweeney et al (2010) argue that the principles behind task design in face-to-face teaching can be transferred or adapted to MUVEs, however, it is important to bear in mind that tasks have to accommodate the issues that adopting a MUVE technology entails.

Wang (2015) explores student participation in *SL* through a TBLT approach. She found that the task phase (as opposed to the pre- and post-task phase) concentrated the highest rate of student output. Sweeney et al (2010) describe two foreign language courses in *Second Life* that are task-based. However, they combine TBLT with other methods such as simulations and a situational approach to maximize the spatial affordances the MUVE offers. Peterson (2008) also reports designing his tasks based on a TBLT approach to outline what discourse management strategies students used in task-based interaction and study if strategy use was influenced by task.

3.5.1.2. Technical issues for setting up learning experiences in MUVEs.

Despite *Second Life* having many learning affordances, there are also technical challenges that must be considered in task design. This section will describe the three important factors to take into account: the technical learning curve, technical difficulties in-world and classroom management.

Many studies make reference to the steep technical learning curve that a user undergoes before becoming comfortable in this online environment suggesting the importance of participants getting sufficient technical training (Anderson, 2009; Love, Ross & Wilhelm, 2009; Sweeney et al, 2010). Atkins and Caukill (2009) found that instructors and students needed around ten hours of exposure to the virtual world before they felt

comfortable in this environment. Teacher-training courses in the virtual world are a good option to get teachers familiarized with the environment and acquire the skills they will need when teaching in the virtual world (Sweeney et al, 2010). It is important to get teachers, as well as learners, familiarized with the SL environment and ensure that they are proficient enough to carry out a class in *Second Life* as well as assist the students if they are having technical problems (Deutschmann & Panichi, 2009).

Apart from the technical learning curve, there can also be difficulties in terms of access or sound quality, which can affect the classes and thus lead to feelings of frustration (Dudeney & Ramsay, 2009). González et al (2010) caution about some of the dangers that were encountered during the *Second Life* classes such as sound issues, temporary unavailability of the platform and lag. The *Second Life* program uses a lot of internet bandwidth, which can cause lag and affect the smooth running of the program and the class (Atkins and Caukill, 2009). These technical issues can have a negative effect on the learners, causing anxiety and affecting their performance.

Although multi-channel environments like *Second Life* offer a wider range of communication possibilities, the likelihood of communication breakdowns also increases (Cunningham et al., 2010). In particular, the channel that has proved most promising and at the same time most problematic technically is the voice channel, as most technical problems are related to the voice chat (Deutschmann & Panichi, 2009).

In the third place, most studies make reference to the importance of classroom management and organization. Atkins and Caukill (2009) describe a project in which students in their final year of Bachelor of Information investigated the environment of *Second Life* with the aims of creating a learning activity for first-year students and exploring its educational potential. They found that organization of the sessions was essential, as the multiple communication channels in *Second Life* could be confusing, and they had to deal

with many technical problems. They concluded by pointing out that educators have to be prepared for unexpected problems and be ready to adapt to situations.

Similarly, Warburton (2008) narrates his problematic encounter during a tour in *Second Life* and summarizes some recommendations that originated from the post tour discussion for educators who want to set up tours such as preparing tour locations on a note card, adding questions on a note card to answer during the quest, having participants sit when they arrive at one area to manage the group, not having more than ten locations for a two-hour tour and have a maximum of four participants per group. Classroom management issues that are taken for granted in a face-to-face context, have to be planned in advance in *Second Life*.

This section has covered the main technical issues that researchers studying learning experiences in virtual world have reported, namely, the steep technical learning curve, technical access and sound problems and classroom management issues.

3.5.2. Language learning in MUVEs.

3D virtual worlds provide learners with the opportunity of using different modes of communication; they even incorporate non-verbal cues that play an important role when communicating in face-to-face contexts. Furthermore, they also allow bringing people from different parts of the world together into one shared space and enabling the users to have a feeling of presence. These factors lead to promising opportunities for interaction and language learning in 3D virtual worlds. Nevertheless, research in 3D virtual worlds in the field of CALL is still a relatively new area. There is a need to understand how learners behave in different CMC environments (Kern & Warshauer, 2000) and how 3D MUVEs can be used for effective communication and language learning.

MOOs, the predecessors of 3D MUVEs, have attracted the attention of educators since the early nineties (Cherny, 1995). There are a number of MOOs that have been

specifically designed for learning foreign languages like Schmooze University, MOOlin Rouge, MOO Français and Mundo Hispano (Molka-Danielsen & Deutschmann, 2009; Donaldson & Kötter, 1999; Schield, 2003). Because MOOs are mainly text-based, they rely on the users' imagination and strong sense of community, as participants work together to create, modify and expand their environment. That is why MOOs are found to foster learner creativity (von der Emde, Schneider & Kötter, 2001). Furthermore, some researchers have shown that MOO environments can be beneficial for quiet learners who do not participate in real life contexts, as they often become more active in a MOO context and are willing to take more risks (Lee et al 1999).

Teachers also have the possibility of giving the students immersion experiences finding solely target-language environments in which users can practice their language skills as well as learning the target culture (Donaldson & Kötter, 1999; Kötter, 2001). Virtual worlds are also good arenas for a collaborative, socioconstructivist projects as the environment is built through the users' collaborative work (Felix 2003; Campbell, 2003; Peterson, 2001). Levy & Stockwell (2006) state that MOOs allow for 'exploratory learning and virtual immersion in a language-learning environment, and as such have potential as a tool for second-language learning.' (p. 93).

Paradoxically, despite the advent of 3D graphic-based virtual worlds, some researchers find that text-based MOOs have pedagogical advantages to graphically interfaced MUVEs. Levy & Stockwell (2006) argue that

> learners are exposed to more language in that they must read descriptions of 'locations' in the MOOs in order to understand where they are or where they want to go. In addition, learners must textually describe their emotions and actions rather than having them visually displayed, as in graphic-based MOOs. (p. 92).

However, 3D MUVEs have gained a wide acceptance among educational researchers and there are a number of researchers who have conducted communication and cultural projects in 3D MUVEs.

Toyoda & Harrison (2002), for example, studied what communication problems triggered negotiation of meaning in NS-NNS interaction in the 3D virtual world *Jewels*. They found that there were several levels of communication difficulties: the word, sentence and discourse level. They also found that communication problems at a discourse level triggered more negotiation and less certainty of the negotiation reaching a successful solution.

Campbell (2003) used *Active Worlds* in a tandem project between British and Japanese students. He found that the participants worked and constructed knowledge collaboratively and the students increased their intercultural awareness through collaborative work as well as their target language and computer skills.

Svensson (2003, p. 123-142) also used *Active Worlds* for a project which he called 'The Wedding project'. The aim behind the study was to encourage the creation of projects that are not exclusively text-oriented, to develop analytical skills, to explore new technology and to work collaboratively with other students on themes through a cultural, linguistic and communicative lens. Although there was a final product, for the students to perform a wedding in the virtual world, Svensson describes the project as process-oriented. With his project, Svensson illustrates how virtual worlds can be good arenas for constructivist immersive learning. He argues that virtual worlds are good environments for the creation of non-traditional media projects, to bring together different disciplines through cross-curricular projects (multi-disciplinary and multi-cultural), and can foster student creativity.

These reports show how virtual worlds are good environments for developing collaborative projects, and for promoting intercultural learning and negotiation. Hence,

MUVEs are excellent spaces for immersive and engaging practice (Svensson, 2003; Sweeney et al, 2010; González et al., 2011).

3.6. *Second Life*

Second Life is considered one of the most popular Massive Multi-User Virtual Environments. It was launched in 2003 by Linden Labs and has grown rapidly since, incorporating the voice-chat feature in 2007.

Warburton (2009, p. 416) describes *Second Life* as 'the most mature of the social virtual world platforms' and also mentions its popularity among UK tertiary educators. This platform has become popular in education due to its "widespread availability, low entry costs […] and the successful integration of synchronous voice." (González, et al, 2011, p. 143). Although the incorporation of voice was met with resistance from most *Second Life* users as it was believed that participants would lose part of their anonymity, the voice integration has attracted many language educators as it offers enormous potential for language learning (Silva, 2008).

As described before, one of the defining features in 3D virtual worlds is the sense of immersion and presence (Smart et al., 2007). There are several studies that research different features that contribute to the feeling of presence. Yee, Bailenson, Urbanek, Chang and Merget (2007), for example, study interpersonal distance and gaze in *Second Life*, and report a strong correlation to real world findings. This sense of presence is represented in interaction through indicators such as deictics or spatial cues to make reference to the virtual environment (Örnberg, 2005). Thus, two factors in *Second Life* that contribute to this feeling of presence are the physical layer and the communication layer (see figure 12). In the physical layer, which incorporates a visual element, users are represented by avatars that they can move to adjust their proxemic behavior. For example, participants can join a circle if there is a meeting, they can sit their avatar on a sofa, or position their avatar near another one

if they want to initiate a conversation. Participants can also use and see other avatars' gestures and animations. At the communication layer, communication, both oral and textual, is distance or space relevant. That is, public oral and written messages will only be heard or seen if the avatar is within a twenty-meter radius. However, the IM is not distance-relevant and can be asynchronous or asynchronous. Finally, the most external layer is the status layer, which indicates in-world presence or absence.

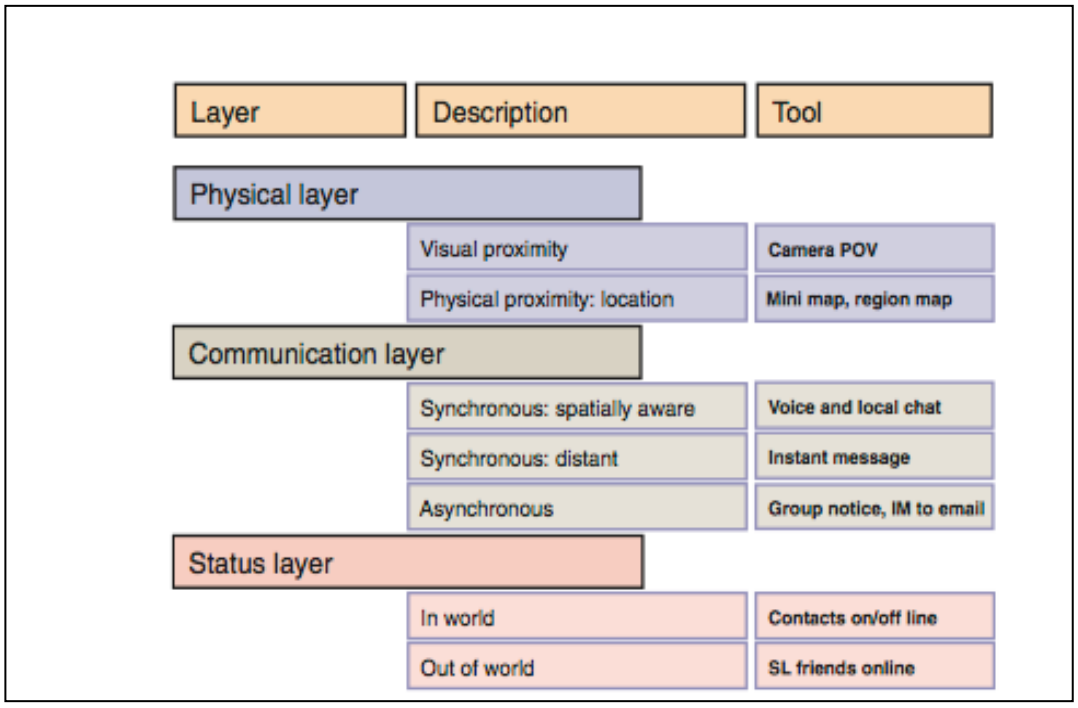


Figure 12. Communication layers in *Second Life* (Warburton, 2009, p. 420)

In the following sections, the multimodal word of *Second Life*, will be described focusing on the different modes of communication available. The modes that will be discussed in the next sections are the verbal mode, which corresponds to Warburton's (2009) communication layer; the non-verbal mode, which is similar to the physical layer; and, finally, the interface. It is important to define the multimodal context of *Second Life* and the different modes of communication to describe communication in a multimodal context and understand how the different modes were used by participants to mange their online discourse in this environment.

3.6.1. Verbal mode.

Second Life offers a range of different channels to support the verbal mode. Herring (2007) suggests a faceted classification scheme for computer-mediated discourse an enumerates a list of medium factors that have an effect on communication: synchronicity, message transmission (one-way or two-way), persistence of transcript, size of message buffer, channels of communication, anonymous messaging, private messaging, filtering, quoting and message format. These factors have been used to describe the verbal communication channels in *Second Life*.

3.6.1.1. Text channel.

As mentioned in the previous section, *Second Life* started out supporting only text-based channels for four years. This virtual world has several written communication tools: local chat, instant message, group notifications, and notecards.

Written communication in this world is essentially synchronous, but it can also be asynchronous. The main text-based communication tool is the public text chat, also known as local chat. This chat is synchronous and any avatar within a twenty-meter range can read any message that is typed using this channel. The message transmission in this world is two-way as several participants can type a message at the same time. Regarding persistence of transcript, messages disappear from the *Second Life* interface as they are replaced by new ones. However, the user can retrieve old messages from the same session by clicking on the chat log. There does not appear to be a limit to the size of the message buffer. Finally the text is always preceded by the user's avatar name. Avatars cannot quote other messages, however, they can use the copy-paste function.

The second most relevant tool is the instant messaging or IM feature. This tool is designed for private communication with another *Second Life* user. This tool is not distance-dependent like the public chat. A user can send another participant a message regardless of

their in-world location through the contacts list. Furthermore, this tool can be synchronous or asynchronous. Participants can write an IM to other participants whether they are online or not. If the addressee is online, they will receive the message in real time, however, if the participant is offline, they will receive the message the next time the participant logs into *Second Life*. As with the local chat, the message transmission is two-way and there is no limit in the message buffer. The transcripts are kept in the log in the IM window and are always preceded by the avatar's nickname.

Participants can join different groups in *Second Life*. If a user belongs to a group, they will receive group notices. The owner or officer of a group can send messages to members or the whole group.

Participants can also create, give or receive note cards. Note cards are plain text documents that can be created in *Second Life* and shared with other avatars. Note cards are shared by dragging a file from the participant's inventory onto an avatar. The note cards are stored into a participant's inventory. They are used to give extensive information such as long texts, images or links. Educators can use note cards as worksheets, as they can be stored in the educator's inventory and later retrieved and shared with students when needed.

3.6.1.2. Voice channel.

In 2007, *Second Life* incorporated the audio modality. This issue caused discontent among certain *Second Life* users and not all of the residents have adopted the audio channel. There are two audio channels, the public audio channel and the private audio channel, all of which are synchronous.

As with the public text channel, it is distance-dependent, anything said through the public audio channel can be heard within a radius of about 20 meters, the volume increases when the distance between avatars decreases, like in real life contexts. *Second Life* indicates through a white light above the avatars' head if a participant has activated the voice feature.

Furthermore, when a user speaks, green sound waves appear above the avatar's head, these waves become bigger or smaller depending on the user's microphone volume (see f*igure 8*). If the sound is too loud or distorted due to sound problems, the waves turn red. The message transmission is two-way, several avatars can talk simultaneously, which can cause confusion when there are many users. Participants can adjust other avatars' volume if they are within a proximity range. The private audio channel works in a similar fashion as the text-based IM. It is not distance-dependent, so users can communicate regardless of where they are.

The incorporation of the audio channels as well as the distance-dependent feature of the public audio and text channels contribute to a feeling of presence and immersion in this virtual world.

Table 5

Channels available in Second Life according to Herring's (2007) medium factors

Medium factors	**Text-based**		**Audio-based**	
	Local chat	**IM**	**Public audio**	**Private audio**
Synchronicity	Synchronous	Synch. and asynchronous	Synchronous	Synchronous
Message transmission	Two-way	Two-way	Two-way	Two-way
Persistence of transcript	Chat log	Chat log	No log	No log
Size of message buffer	No limit	No limit	-	-
Channels of communication	Text-based	Text-based	Audio-based	Audio-based
Anonymous messaging	SL user name	SL user name	Green lines above avatar	SL user name
Private messaging	Public	Private	Public	Private
Filtering	No	Block user	No	Block user
Quoting	No	No	No	No
Message format	Message appears on bottom left	Message is in a window on bottom	Green lines when avatar is speaking	Chat window

Table 5 provides a summary of the different verbal channels available in *Second Life* taking into account Herring's (2007) medium factors. As can be seen in the table, the channels are mainly designed for synchronous communication.

3.6.2. Non-verbal mode.

One of the defining features of 3D virtual worlds is their graphic user interface (Book, 2004). The non-verbal or visual and spatial modes have an important role in communication in a multimodal environment like *Second Life*. The actions in the non-verbal mode have been classified as avatar-related and environment-related.

3.6.2.1. Avatar-related actions.

Avatar-related actions are those user-generated actions that originate from and modify the avatar.

Firstly, users can modify their appearance. When users create an account, they have to think of a name and select a last name from a list as well as an avatar, which can be male, female or furry (an animal-shaped avatar). During the creation process of their account, users can chose their avatar's body shape, height and parts as well as their skin color. They can also choose how to dress their avatar. Participants can decide to keep the default avatar they are given when they create an account or can experiment with their avatar and their online persona.

When communicating in this virtual world, participants can also send non-verbal cues through their avatar using gestures and animations. *Second Life* has a list of pre-defined gestures such as waving or dancing that can be activated by going into the gestures folder in the user's inventory. There are shortcuts that can be typed into the public text chat to activate a gesture to speed up the process. The pointing gesture does not need to be activated through the gestures folder, when a user clicks on an in-world object or location, the avatar will

display a pointing gesture. Thus, deictic gestures (Wigham, 2013) as pointing, gain a special relevance in *Second Life*.

Animations are activated through the animations folder in the user's inventory or by specially designed in-world objects that animate the user's avatar. For example, when a user clicks on a chair that has been designed to sit and selects 'sit' the avatar will assume a sitting position.

There are other non-verbal behaviors that are computer-generated such as posture or gaze. For example, when an avatar is inactive, it slumps down, or sometimes the avatar gazes at different points in the world following the mouse pointer.

3.6.2.2. Environment-related actions.

Environment-related actions refer to the interaction of the avatar with the online environment. There are two types of environment-related actions: kinesics and proxemics actions.

Kinesic actions refer to avatar movement. In *Second Life*, users have a wide range of kinesic actions that they can perform on the environment, for example, they can walk, run, fly, jump, sit or teleport to another location.

Regarding proxemics, users can decide how to position or orientate their avatar in-world. For instance, if there is a discussion, users can decide to position their avatars in a circle. Proxemic behavior is important in interaction and in the feeling of presence.

These user-generated non-verbal actions are important to shape interaction in a virtual world. There are several researchers who have studied non-verbal communication in virtual worlds. Several researchers have studied the effect of non-verbal behavior in communication in *Second Life* and how certain behaviors are transferred from face-to-face contexts (Yee et. al., 2007; Friedman et al., 2007). Naper (2011) found how avatars tended to position their avatar close to another one when interacting.

Although the verbal mode, especially the written modality, has been for a long time the main object of study in communication studies, in recent years, the visual mode has gained importance in research (Hampel & Hauck, 2006).

3.6.3. Interface.

The *Second Life* interface can be divided into four sections: the 3D in-world window, the contextual menu, the navigation tools and the inventory (see figure 8).

The main section is the in-world window, which shows the user's avatar, the location of the avatar and any other avatars and objects that are in the space. The user can interact with the environment by clicking on objects or teleporting to another location, and can also interact with other avatars.

At the bottom of the in-world window, the user has the chat window for text-chat and next to it there is a 'speak' button to activate the microphone. Next to the speak button is the 'active speakers' list, to adjust the volume of the avatars who are around. The bottom row also includes navigation tools to move the user's avatar.

Above the in-world window, there are drop-down contextual windows that allow the user to perform several actions on the *Second Life* program such as set up the sound preferences.

Last, but not least is the inventory, which is on the right side of the interface. The inventory has several tabs: people, suitcase and world. It is important for the user to master the inventory and know how to organize, store and retrieve objects in order to navigate *Second Life* successfully.

Chapter 4: Objectives and Research Questions

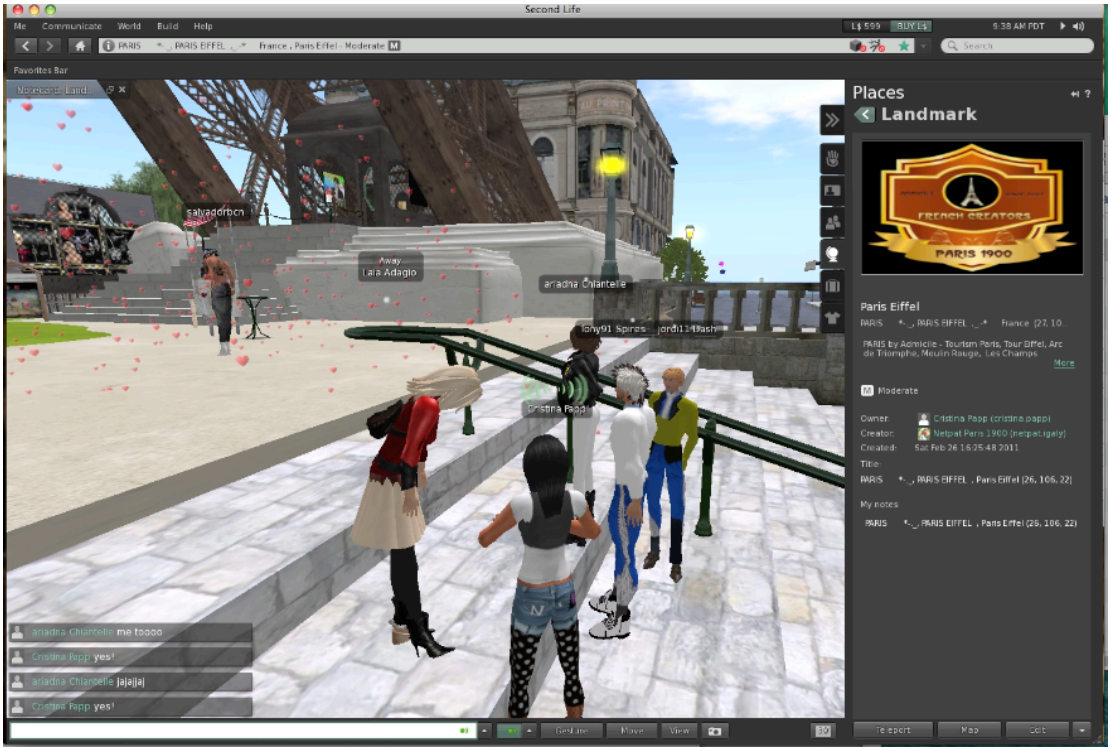


Figure 13. Class is underneath the Eiffel Tower

Computer-mediated communication (CMC) has been increasingly employed in the foreign language classroom as a tool to interact with other people in the target language. According to the communicative approach, students need to use the target language in order to acquire it. It is not enough for a learner to know the grammar rules, the learner should also know how to use the language in a specific context. Thus, CMC provides a way of using the language inside and outside the classroom and allows students to interact with native or non-native speakers of the target language.

Every year there are new and more sophisticated tools in CMC that mediate interaction in online contexts. Through these tools, users have at their disposal an array of different communication modes they can use in the meaning-making process (Kress & van Leeuwen, 2001). However, there is little research on the impact of multimodal environments and the use of different modes on interaction in online language learning. A lot of research

focuses on the verbal modes, but not enough attention is given to other modes that contribute to the meaning-making process (Hampel & Stickler, 2012).

Another area that needs further study is the use of discourse management strategies by teachers and learners in a MUVE and how they adapt to the features of these multimodal virtual environments to achieve effective communication.

4.1. Research Objectives

This study focuses on the online discourse strategies, interactional modifications and corrective feedback, from a multimodal perspective, which the teacher uses with her students in an ESP practice context in the 3D MUVE of *Second Life*.

Thus, the aims in this dissertation are the following:

- To describe the teacher-generated discourse in a MUVE context.
- To describe and analyze the teacher's use of online discourse strategies to manage a class in a MUVE context.
- To describe and analyze teacher interactional modifications in a MUVE context.
- To describe and analyze the use teacher corrective feedback in a MUVE context.
- To describe and analyze the communication modes used by participants and their functions in communication.
- To describe and analyze how the teacher manages a class in a MUVE by using different communication modes to achieve effective communication.

Thus, the aim of this study is to help foreign language teachers who are interested in teaching in a multimodal environment by describing the teacher's discourse during an ESP class, analyzing what online strategies the teacher uses and how the teacher manages the different communication modes in a MUVE to achieve effective communication.

4.2. Research questions

The research questions that shape this study originated from the researcher's previous experience teaching in *Second Life* as well as from existing literature about teaching and learning experiences in this MUVE. The questions were further adapted and modified as a result of the observations made during the data collection process.

This section will outline the research questions that guided this study as well as their rationales.

RQ 1. What kind of online discourse management strategies (transactional and interactional) does the teacher use in ESP lessons in a MUVE?

RQ 1.1. Which ones are adaptive or specific to a MUVE?

RQ 1.2. What role do technical strategies have in a MUVE class?

RQ 1.3. What actions does the teacher perform on the interface to manage a class in a *MUVE*?

The literature review in chapters 2 and 3 show that there are few studies that have focused on the role of the teacher in a virtual world. It is important to know what strategies a teacher needs to use to avoid or deal with communication problems in this online environment that has a multiplicity of communication modes but a limited range of paralinguistic and non-verbal cues.

There are researchers who have studied the online features and strategies in different types of CMC contexts (Cherny, 1995; Darhower, 2002; Gowans, 2011; Herring, 2001; Peterson, 2008; Werry, 1996). Following the framework devised by Peterson (2008) to analyze learner-learner interaction in a MOO-based environment, this study has focused on the transactional and interactional strategies used by the teacher in a MUVE. Transactional strategies are important to ensure that the interlocutors' communication goal has been reached successfully, however, interactional strategies, are also very important in online

environments, as they can compensate for the lack or limited range of paralinguistic cues and create a positive social environment conducive to learning. Thus, it is important to use strategies to indicate presence and to create a comfortable learning atmosphere (Cherny, 1005; Chun, 1994; Darhower, 2002; Negretti, 1999; Peterson, 2008).

Another interesting point for studying strategies in a MUVE was to observe if the specific MUVE context influenced strategy use. In other words, RQ 1.1. aims to answer whether there were online strategies unique or adaptive to this multimodal environment or if the strategies used were the same as the ones used in a text-based online environment. Researchers who have studied virtual worlds have pointed out how the different modes in *Second Life* have an effect on the communication that is produced in the online environment (Naper, 2011; Wigham, 2013).

This question is of relevance as it is important for educators who are considering teaching in a multimodal virtual world to be aware of what discourse strategies are used in a world with limited non-verbal and paralinguistic cues and how the different modes in this environment shape communication in this particular context. It is also important to know what classroom management issues arise in a complex multi-channel multi-mode environment and how they are dealt with.

Transactional strategies have been further divided into netspeak strategies and meta-environment or technical strategies, in order to answer RQ 1.2. regarding the role of technical talk. This question emerged from the analysis of the data after observing that a considerable number of turns were devoted to the technical dimension of the MUVE. Following Osman and Herring's (2007) classification of the function of turns in online contexts, each turn was coded by function.

This question is relevant to the research to understand what kind of technical issues arise in a MUVE, how often they happen, what kind of strategies the teacher puts into action

in these situations and, ultimately, if virtual worlds are an effective mode for communication and teaching of a foreign language. Osman and Herring (2007) found that technical turns were rare because participants were familiar with the online environment, however, in this case, participants were new to an environment known for its steep learning curve so a high number of technical turns, especially at the beginning of the course, were expected.

RQ 1.3. aims to describe the different actions the teacher performs on the *Second Life* interface to manage a classroom. There are no studies on teacher interface management in *Second Life*, however it is an important aspect in classroom management that can be studied thanks to the use of screen recordings from the teacher's computer.

RQ 2. What kind of interactional modifications does the teacher engage in to make her input more comprehensible in ESP lessons in a MUVE?

RQ 2.1. Does the teacher use the written channel as an aid to provide comprehensible input?

There are many studies on interactional modifications in face-to-face classrooms (Ellis, 1985; Walsh, 2011). However, there are few studies on teacher interactional modifications in CMC contexts, especially in virtual worlds.

Starting from the same premise as RQ1, in a MUVE with limited paralinguistic cues in which the teacher cannot see the students, but a representation of them in the form of an avatar, it is relevant to study what interactional strategies the teacher uses to make her discourse more comprehensible. Furthermore, RQ 2.1. refers to the fact of whether the teacher made special use of the multiplicity of communication channels available to make her input more comprehensible.

This question aims to uncover what strategies the teacher incurs in when there is a paucity of paralinguistic or non-verbal cues to provide comprehensible input as well as seeing if the

teacher can use the MUVE features, such as the multiplicity of communication channels or the visual mode, as an aid and a strategy to provide comprehensible input and compensate for the limited range of paralinguistic or non-verbal cues.

RQ 3. What kind of corrective feedback does the teacher provide in ESP lessons in a MUVE?

RQ 3.1. What kind of errors does the teacher offer corrective feedback on?

RQ 3.2. How do students react to the feedback?

RQ 3.3. Which is the preferred channel for corrective feedback?

One of the features in teacher discourse is corrective feedback. This question aims to explore how often the teacher provided corrective feedback, what triggered this feedback and if the feedback resulted in modified input or not. Another aspect that is explored is the role of the online environment and how it affected the provision of feedback by observing if there was a type of feedback more prone to appear in a certain channel or if channel was not a relevant factor in the provision of corrective feedback. Wigham (2012) found that the text-chat modality was used to provide unobtrusive feedback, and, when the audio modality was used, it frequently led to a communication breakdown.

RQ 4. What modes do participants use to communicate in ESP lessons in a MUVE?

RQ 4.1. What are the different channels in the verbal mode used for?

RQ 4.2. Is there a preferred mode for communication?

RQ 4.3. Are there instances of combined use of modes to create meaning in a MUVE?

As has been noted in section 2.4. of the literature review, a multimodal approach assumes that meaning is constructed through the interaction of several modes of communication. It is

important to study how the multimodal aspect of *Second Life* affects and shapes the communication produced in this MUVE.

The first question (RQ 4.1.) seeks to describe the use of the different communication modes, particularly the verbal mode, with its different modalities. Hampel & Stickler (2012) study the use of the audible and the text mode by teachers and students in a multimodal environment. Question 4.2. aims to describe the preferred modes for the teacher and students and how it affected their participation. Question 4.3. focuses on the combination of modes to create meaning in the virtual world and, thus, make communication more effective. Örnberg (2005) and Naper (2011) studied how the visual mode shaped communication in virtual worlds. Wigham (2012) studied how participants make in-world references, and provides a useful classification to study the role of the visual mode.

Chapter 5: Methodology

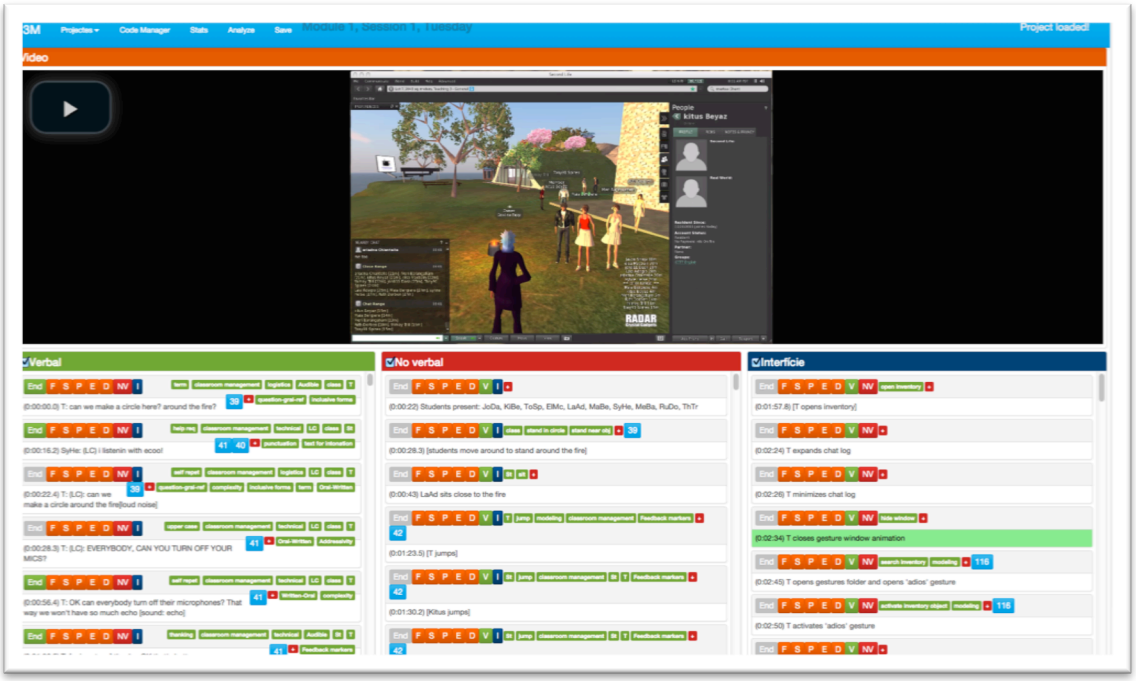


Figure 14. 3M method annotation interface

The objectives and research questions outlined in the previous chapter prompted the research approach adopted in this study. This study draws on an ethnographic and interactionalist approach using computer-mediated discourse analysis, as the purpose of this study is to describe the communication that occurs in a class setting in the virtual world of *Second Life* and to examine the online discourse management strategies that the teacher uses with her participants to manage a class in a multimodal environment.

After detailing the ethnographic approach adopted in this study, the pedagogical scenario is outlined, including the setting, participants and the course. Following the context, the data collection methods are presented. Finally, the data analysis approach is explained.

5.1. Research Approach: Ethnographic Approach

Ethnography originates from the field of anthropology and its aim is to describe and analyze a particular culture or social community (Saville-Troike, 1982). One of such

communities is the language classroom, which is considered a 'microcosm', with its own social conventions (Bowers, 1987, p. 9).

Numerous authors have made a case for studying the language classroom through an ethnographic lens (Allwright & Bailey, 1991; Cambra, 2003; Van Lier, 1988). Van Lier (1988) suggests that the classroom possesses certain special features that occur in a controlled context and which make it particularly attractive for researchers. Furthermore, much of what occurs within the classroom is largely unknown; hence the need for a research approach that focuses on the process rather than on the product to shed light on what takes place in the language classroom and broaden our understanding of teaching-learning processes (Cambra, 2003). Therefore, the aim of ethnography in education is to explore and interpret what occurs in the social life of an educational situation (Cambra, 2003). An ethnographic approach possesses several defining features that should be considered when undergoing research in this field.

Ethnographic research has an empirical and naturalistic dimension (Cambra, 2003). In order to understand interaction and interpret the phenomena that is being researched, it is essential to gain knowledge of the setting in which the interaction is produced. It also means that the research takes place in the same context where the action occurs naturally, i.e., due to its empirical nature, it relies heavily on fieldwork and observation (Laplantine, 1996; Whitehead, 2004).

Another important principle in ethnographic research is its holistic nature (Saville-Troike, 1982; van Lier, 1988). This means that the target community is considered a whole, where components cannot be understood in isolation, as each component affects the others (Saville-Troike, 1982). Also, this approach "considers the classroom situation in its totality and places it in a wider social context" (Mehan, 1979, p. 14), placing the target community within a broader context.

Ethnographic research is based on the principle of emic and ethic enquiry (Van Lier, 1988). The emic view requires that the researcher leave aside their external preconceptions and adopt the internal perspective of the participants involved in the interaction when interpreting the data (Saville-Troike, 1982). By adopting an internal point of view, the researcher may gain insight on how a community of speech operates. However, taking a purely emic approach to research can result in the research being too biased and subjective. The ethic perspective, on the other hand, consists of taking an external approach and analyzing the cultural system through paradigms or categories established *a priori* (Saville-Troike, 1982; Whitehead, 2004). By complementing the emic with the ethic perspective, the researcher can achieve 'emic validity' through the use of an objective framework that can be used as a reference that is then interpreted through an emic lens (Whitehead, 2004, p. 16).

Attached to the emic principle is the interpretative nature of ethnographic research. The findings in ethnographic research are based on interpretations made by the researcher based on observation. Therefore, there is always a certain degree of subjectivity (Whitehead, 2004). Nevertheless, Allwright and Bailey (1991) make a case for the presence of both objectivity and subjectivity in naturalistic classroom research, as the content of the research cannot be carried out independently from the subjects and from an understanding on how they perceive their reality.

Finally, ethnographic research is open-ended. Ethnography consists in learning *from* the participants or members of a culture rather than learning *about* them (Spradley, 1979, cited in Whitehead, 2004). Thus, the researcher should remain open and unbiased to discoveries or unexpected outcomes that derive from the fieldwork (Whitehead, 2004).

Ethnography of communication (Gumperz & Hymes, 1964) results from the combination of ethnography and linguistics. Communication cannot be studied in isolation from the context where it is produced and language use differs in different societies and

cultures. Dell Hymes (1972) bridged the gap between ethnography and language by bringing in his famous SPEAKING model, which stands for the elements present in a communication event. Thus, ethnography of communication offers an integrated approach to the study of communication and helps the researcher understand in more depth what occurs in a specific community by exploring what patterns of communication emerge from participants in a specific context (Saville-Troike, 1982).

According to Saville-Troike (1982, p2) the essential question in ethnography of communication is 'What does a speaker need to know to communicate appropriately within a particular speech community[…]?'. This question encompasses not only the rules underlying communication and interaction but also the cultural rules that frame the context into which the communication event is framed.

The present research explores from an ethnographic perspective how participants, who find themselves in a new online multimodal environment, use the communication resources available to interact with others and to create meaning and how the new context influences their communication behavior. This study, taking a naturalistic and empirical approach has drawn on classroom observation to analyze interaction from the teacher's perspective.

5.1.1. Classroom observation.

Classroom observation is an essential element in educational ethnography. In order to gain knowledge of what occurs in the language classroom, research is needed on the participants who are involved in the process. It is vital to analyze their discourse, which cannot be de-contextualized from its naturalistic setting, it should be analyzed qualitatively taking into account the discourse as a whole and all the contextual elements in which the learning process is embedded (Van Lier, 1988).

Observation can be carried out through participant or non-participant observation. The former is less obtrusive as the researcher takes on two roles: teacher and observer, thus not having to bring in an external observer to the classroom scenario (Van Lier, 1988).

The emic principle is linked to the method of participant-observation. Typically, ethnographic research draws on the participant-observation method for collecting data. In fact, Hammersley and Atkinson (1983) use ethnography and participant observation as cognate terms. This means that the researcher has an inside role within the speech community. Thus, the researcher takes on the role of participant in the community to see the reality through the participants' eyes, but also needs to achieve a degree of separation to observe and interpret as the event unfolds. This dual task is challenging as it requires the researcher to be sensitive the reality of the speech community to be able to understand it and describe it and, at the same time, to be objective and avoid bias and preconceived notions (Saville-Troike, 1984). Participant-observation has great advantages for research, as the participants do not see the researcher as a foreigner to the community, which could affect natural interaction; moreover, the researcher can gain a depth in understanding that cannot be achieved with external observation. Although critics warn that participant-observation carries the risk of the researcher losing objectivity or overlooking phenomena because of being immersed in the context, advocates argue that the social world can only be understood by taking a participant view (Allwright & Bailey, 1991).

Participant observation "combined with recording, transcription and analysis, can be a rigorous method of classroom interaction analysis" (Van Lier, 1988, p. 40) as it allows for the researcher to be involved in the class during the data collection process and it later allows the researcher to take a detached stance.

The type observer adopted for the present study was that of full participant. The researcher took on a dual role during the data collection process: that of teacher and

researcher. Thus, by adopting a teacher role, the researcher was assuming a full-participant role in the community and obtaining an emic perspective. During the classes, the researcher/observer role took a second place, making the observer role less obtrusive. Unobtrusive measurement tools such as screen recordings made the data recording invisible to students, and thus, it had a minimal influence on their behavior. Participant observation combined with class recordings reflect the emic and holistic aspects of the ethnographic approach that was adopted.

5.1.2. Case study.

A case study provides a detailed example of how a bounded instance like group of people in a specific context behave, helping readers understand the complex phenomena behind human interactions, relationships or events (Cohen et al. 2013). A vital feature of this method is that the data is seen as a whole, rather than a sum of elements (Sturman, 1999 cited in Cohen et al. 2013).

Hitchcock and Hughes (1995, p. 332) outline the main features that are common in case studies:

- They are concerned with a rich and vivid description of events relevant to the case.
- They provide a chronological narrative of events.
- They blend a description of events with the analysis of them.
- They focus on individual actors or groups of actors and seeks to understand their perceptions of events.
- They highlight specific events that are relevant to the case.
- The researcher is integrally involved in the case.
- They attempt to portray the richness of the case in writing up the report.

These authors highlight the importance of the description and analysis of events that are set within a temporal and geographical frame, the case, as well as the researcher's role.

The fact that the researcher is involved in the case has the benefit of allowing the researcher to obtain detailed data on the main subjects under investigation.

According to Yin (2003) a case study should be considered when: the focus of the study is to answer 'how' and 'why' questions; (b) the participants' behavior is not manipulated; (c) contextual conditions are relevant in the study. Yin (2003) highlights the relevance of the research questions as well as the importance doing research in a naturalistic setting where the context plays an important role. In fact, a distinguishing feature in case studies concerns the uniqueness of their contexts. This method can help investigate and unravel the complexities underlying singular and unique settings. However, although case studies can provide valuable insights about a particular context that might be overlooked when using other research methods, the singularity of the context may not allow for generalizations beyond the specific context (Nisbet and Watt, 1984).

Case studies go beyond the quantitative and qualitative dichotomy. Chaudron (1988) states that qualitative and quantitative approaches are mutually dependent. In fact, most ethnographic studies need to refer to "the frequency, magnitude or proportion of analytical units observed." (Chaudron 1988, p. 15). Using a case study methodology allows to combine quantitative and qualitative methods which can aid in the understanding of the communication event holistically. This hybrid approach has enabled the observation and interpretation of the data through a combination of different methods, which has allowed for a greater richness in the interpretation of the results.

The present study follows the principles of a case study method outlined by Yin (2003) and Hitchcock and Hughes (1995). It focuses on a unique scenario, and the aim in this study is to shed some light on the complexities underlying communication in a multimodal world. Most of the research questions that guide this study start with 'how' or 'what', the participants were not manipulated, the context was an essential factor for the study and it was

an important factor in the design of the research questions (Yin 2003). Furthermore, the researcher took a participant-observer stance, it focuses on the teacher as an individual actor as well as the students as a group of actors, and the analysis section provides a description of the events as well as an analysis of them (Hitchcock & Hughes, 1995).

5.2. Pedagogical Scenario

This section describes the specific context where the study was carried out, including the setting and the participants, as well as on the tasks that were designed for the study.

5.2.1. Research setting.

The present research was carried out at the Escola Universitària d'Hoteleria i Turisme CETT-UB[7], a college that is attached to the University of Barcelona. CETT-UB offers a different range of vocational training, undergraduate, and masters degrees related to the Tourism industry. The selected degree for the study was the undergraduate degree in Tourism.

The study plan in the Tourism degree includes three English for Specific Purposes (ESP) courses, which correspond to three levels: initiation, intermediate and advanced. In these courses, students learn English for Tourism purposes. The courses are yearlong, and, typically, students take the English courses from their first year to their third year. Upon enrolling in the BA in Tourism, students take an English level test, if they have a pre-intermediate level or lower, they are automatically enrolled in the initiation level. If students have a higher level, they can enroll directly in a more advanced English course. The main focus of these courses is to learn how to cope with different situations in the hospitality industry. Thus, the content in these courses is highly functional and the main aim is for

[7] For more details on the university, visit http://www.cett.es/

students to achieve oral fluency when communicating in specific situations related to the tourism industry.

5.2.2. Participants: The teacher.

The teacher who undertook the current study had a BA in Translation and Interpreting and a Masters in teaching EFL. Her L1s were English, Catalan and Spanish and she also had a B2 level of German.

The teacher had five years of experience teaching English as a Foreign Language in secondary and university contexts. She worked for one year at a high school teaching English in secondary education as well as in vocational training courses. She worked for five years in adult education teaching English courses to pre-service Primary teachers at the University of Barcelona as well as in the degree of Tourism at CETT-UB. She also worked teaching EFL summer courses for adults and teenagers at the Escola Oficial d'Idiomes – Vall d'Hebron in Barcelona from 2007 to 2010. Her teaching methodology is based on a communicative approach to language teaching as she believes in designing opportunities for creating meaningful interaction and target language practice among students.

Regarding her experience as an online teacher, she worked as a teacher and course designer for *Languagelab*, a private language company in *Second Life*, where she taught two beginner courses of Spanish for Tourism. A typical Spanish town called *Ciudad Bonita* was specially designed in *Second Life* for the Spanish course. The town had different kinds of shops, establishments and buildings that were used as settings for the different activities. The course contained different situations that tourists were likely to encounter during a trip to a Spanish-speaking country following a typical travel narrative. At the beginning of the course,

for example, the students were greeted at the train station or at the airport, marking the starting point of their adventure into a Spanish-speaking country[8].

The teacher has also written two book chapters[9] on her experience teaching a foreign language in *Second Life* and has presented vaious papers on this experience at face-to-face conferences and at conferences held in *Second Life*.

The teacher taught the face-to-face ESP course as well the Virtual Tourism Project that took place *Second Life*. The teacher had worked at that university for four years before starting the Virtual Tourism Project and was therefore familiar with the contents in the *English I* syllabus. Furthermore, she was experienced teaching online courses in *Second Life*.

The teacher took on a research-participant perspective, as she had a dual role in the study: she was the teacher of the course as well as the researcher.

5.2.3. Participants: The students.

The participants that were selected for the study were the teacher's *English* (Level 1) students. Fifteen students were offered the possibility of taking part in some additional fluency practice sessions in *Second Life* after their classes.

Eleven female students and two male students ranging from 18 to 23 years of age volunteered for the *Second Life* sessions. All of the participants were in their first year except for three students, who had failed the English course the previous year and were now in their third year. All of the students were Spanish, so they shared the same L1s. Four of the students' L1s was Spanish (30.8%), five of the students reported Catalan (38.5%) as their L1 and four of them were bilingual in Catalan and Spanish (30.8%).

---

8 For more information on the Spanish course in *Second Life*, see Gonzalez et al. (2011)

9 See Sweeney et al (2010) and González et al. (2011)

Nine of these students were studying an additional foreign language apart from English, eight were taking French and one was enrolled in German. The other four participants were only studying English as a foreign language.

Out of the thirteen students who started the project, nine continued with the project until the end. There were four dropouts, the reasons for abandoning were three: one student left the Tourism degree, two of them found jobs and could not continue with the project and one had to abandon the project due to technical problems with the *Second Life* program, which did not allow her to follow the classes.

Regarding formal learning of English, all students had studied English at school for a range of eight to twelve years and six of them had also studied English at a language school for four to ten years. Only one student had an English certificate, which certified a B1 level of English. Concerning informal practice, two students practiced their foreign language at an English summer camp, one student practiced English on trips and one student used English during a work placement at a hotel. All of the students reported being in contact with the foreign language through different types of exposure, all of them listened to music in English, eight watched movies and TV series in English, and four of them practiced their English by chatting or conferencing through *Skype* with native friends or relatives.

To sum up, all of the students had at least eight years of formal learning of English and had been exposed to English in informal context. Despite the number of years the students had invested in learning the foreign language, these students had between an A2 and B1 level of English.

Concerning their level of ICT knowledge, students used computers from 10 to 36 hours a week. All of them reported using computers for two purposes: university work and social networking. The students' favorite social networking sites were *Facebook, Tuenti* and *Messenger*. They were also familiarized with the audio conferencing tool *Skype*.

When asked if they liked learning languages through computers, three students responded affirmatively, one student did not and the rest did not care. Only one student had been in *Second Life* before, but most students reported that they were looking forward to trying this new technology as they expected that the classes would be different, fun and more dynamic.

5.2.4. The Virtual Tourism project.

The *Virtual Tourism Project* was embedded in the framework of the course Communication in *English for Tourism I*. The main reasons behind the course choice were that the topics covered in this subject's syllabus were very functional, the aim being learning to communicate in different situations which a person working for the tourism industry may encounter such as checking in a guest in a hotel, giving a guided tour, and giving directions. Thus, it was deemed that *Second Life* could prove to be a valuable environment for providing additional and more context-appropriate practice in these situations. Secondly, most students at this university start doing internships and work placements in their second year, which makes it harder for them to engage in off-campus projects.

The nine *Second Life* sessions object of study were designed as additional practice sessions that fitted in the three blocks covered in the *English I* syllabus (see Appendix B). The *Virtual Tourism Project* was divided into three modules (see Table 6), each of which contained three one-hour sessions. The modules were linked to content presented in the *English I* syllabus and the sessions were spread out throughout the year in accordance with the timing of the contents in the general course syllabus.

The methodological approach adopted in the design of the sessions was task-based, as the modules were designed towards the accomplishment of final tasks whose purpose was to deal with specific real-life situations that students are likely to deal with in their future careers (Nunan, 1989). During the module, students engaged in role-plays and other

'enabling activities' (Nunan, 1989) to put into practice a range of situations from different tourism contexts and prepare the students to undertake the final task. The final tasks in each module had a social/communicative as well as spatial dimension (Deutshmann & Panichi, 2009) as the MUVE environment played an essential role to carry out the communicative tasks (Sweeney & Palomeque, 2010).

The following table illustrates a highly abridged overview of the organization of the three modules that were carried out in *Second Life*. As can be seen in Table 6, the final task in module 1 consisted of a role play in which students had to deal with an unexpected problem in a guest's hotel room. Modules 2 and 3 had a similar final task: students were expected to deliver a guided tour of a museum and a city respectively. The three final tasks were 'rehearsal tasks', as their aim is to prepare students for real-life situations that they could encounter in the future (Nunan, 1989).

Table 6

Overview of the modules and tasks in the Second Life sessions

Module	**Topic**	**Final Task**	**Calendar**
Module 1	Hotels	Role-play: Dealing with complaints about a hotel room	October 2010
Module 2	Museums	Delivering a guided tour of a museum	November 2010
Module 3	Cities	Delivering a guided tour around three important sites in a city	March 2011

Students were introduced to this project during the first week of the course. There was a *Second Life* orientation session scheduled during class-time in the computer laboratory for all the students. The aim was to show students what *Second Life* is, help them create an account, design their avatar and learn how to navigate this new online environment. During this orientation session, students created their avatar and learned basic navigation skills that they would need throughout the *Second Life* sessions such as creating a notecard and transferring it to another avatar or activating a gesture from their inventory. Once all the students had been introduced to *Second Life* and knew what it was, more details were given

about the nature of the sessions and the incentives for participating. In exchange for this 9-hour commitment, they would get an extra mark in their final assessment as an incentive. Also, the *Second Life* activities were designed as extra fluency practice, so that students who chose not to participate in the project did not miss out on course content.

The students who volunteered to take part in the project were asked to agree on a fixed day and time to meet for these virtual sessions. The group selected for this study, which was split into two smaller groups, agreed to meet on Wednesdays from 4pm to 5pm or from 5pm to 6pm.

When a module started, students met once a week for three weeks in a row. Table 7 displays an overview of the activities carried out in module 1 per session.

Table 7

Overview of Module 1

MODULE 1: HOTEL		
SESSION	**DESCRIPTION**	**CALENDAR**
Session 0 (computer lab)	- Creating an account and avatar. - Gymcana to get familiar with the *SL* environment and avatar navigation.	5 + 7 Oct 2010 (split group)
1 week to give SS time to get familiarized with *SL* and its navigation, download the program on their computers and make sure they can log in from home		
Session 1	- Go over basic gestures, navigation - Create a notecard - Discussion on avatars' appearance - Hotel treasure hunt - Check-in role play	20 Oct
Session 2	- Hotel check-in recap - **Final task: Complaining about rooms** - Feedback on session	27 Oct
SL skills needed	- Avatar movement and gestures - Creating a notecard, opening and sending a notecard	

Module 1 consisted of different activities, which included environment familiarization activities, discussions, races and role-plays.

After the orientation session in the computer laboratories, students were given one week to download the *Second Life* program onto their personal computers and ensure that they could run the program before starting the sessions.

The aim behind the first *Second Life* off-campus session was twofold. The first objective was to make sure everyone's sound was working and go through some *Second Life* technical skills the students would need for the sessions. The second goal was to start some language practice in a hotel through activities that called for basic *Second Life* navigational skills such as moving one's avatar and receiving and opening a notecard. Thus, the first part of the session was of a technical nature, while the second part was focused on communicative activities in a hotel that was designed and donated by Antonella Berriolo, a teacher of Italian who built the hotel for her Italian classes in *Second Life*.

At the beginning of the class, after the greetings, the teacher showed the students how to use a range of features such as gestures, movement, and creating a notecard (see figures C1 and C2 in appendix C for illustrations). The first activity consisted of writing the students' real life name and their avatar name in a notecard that they then had to transfer to the teacher in *Second Life*. After that, the group engaged in a discussion on their avatar's appearance and students were asked to express preferences (see figure C3 for illustration). During the second part of the class, the group moved to the hotel building. The first activity was geared towards getting to know the new space: the hotel. The students engaged in a 'Total Virtual Response' activity and had to run to objects and places that the teacher named (see figure C4 in appendix C). In the last activity, the students got into pairs and were given a receptionist or a guest role. Students engaged in a check-in role-play at the reception of the hotel (see figures C5, C6 and C7).

In the last session of the Hotels module, students met at the hotel and the students who had not checked-in in the previous session, checked in then. The guests were given a

hotel room number and they were asked to go upstairs to inspect their room and come down if they needed anything from reception. All of the rooms had a problem, such as dirty linen, bugs crawling on the carpet, or no beds. The guests then, had to walk downstairs and complain to their partner, who was playing the role of the receptionist. The roles were then inverted. At the end of the session, students were given feedback on their performance and were then asked to share their impressions of their *Second Life* experience.

There were no substantial differences between the task-design and implementation. However, because of the high number of students who volunteered for the project, the participants experienced many technical disruptions during the first session of the first module. It was then decided, to split the group into two groups who met at different times for the forthcoming sessions.

Table 8

Overview of Module 2

MODULE 2: MUSEUM		
SESSION	**TASK DESCRIPTION**	**CALENDAR**
Session 1	Discussion about museums, activate museum vocabulary and teacher models a guided visit to a museum	10 Nov
Session 2	SS are presented a list of different museums. In groups, they prepare a guided tour around a museum they choose.	17 Nov
Session 3	- **Final task: SS make a guided tour around a museum** - Discuss differences with real life museums.	24 Nov
SL skills needed	- Create, receive and open a notecard - Send IMs - Teleport to a different location - Animate one's avatar by clicking on an object or saving an object in the inventory	

In this module students engaged in discussions, virtual field trips and group work to prepare to deliver a guided tour around a museum.

In the first session, students discussed their personal experiences regarding museums: what museums they had visited, what their favorite museum was and why, and what original

museums they had visited or heard about. After the discussion, students brainstormed vocabulary related to museums. In the last part of the session, the teacher took the students on a virtual trip to an Art museum and modeled language that they were going to need to deliver a tour. Students took notes of important guiding language and sent the teacher the notecard at the end of the session.

In the second session students were presented with a list of different museums (see figures C8 and C9 in appendix C). In groups of three or four, students were asked to select a museum, explore it and prepare a guided tour that they would present in session 3. At the end of the session, students went back to the headquarters and reported on what they had seen.

In the third session, students delivered a guided tour for the rest of the class and the teacher, who were visiting the museum. The students who were playing the tourist role could ask questions at the end of the tour (see C10 for illustration). After the tours, the group went back to the class headquarters to discuss the differences between real life and virtual museums.

Table 9.

Overview of Module 3

MODULE 3: VIRTUAL TOURISM		
SESSION	**TASK DESCRIPTION**	**CALENDAR**
Session 1	- Visit a tourist information center and look at leaflets promoting different cities. SS perform a role-play in the TIC. - T models a guided city tour of Rome and Fez	9 March
Session 2	- Students in groups choose a city and choose 3 interesting spots to prepare a guided tour. SS - Report their findings at the end of the session.	18 March
Session 3	- Guessing game: city riddles **- Final task: Guided tour of the city**	23 March
SL skills needed	- Create, receive and open a notecard - Teleport to a different location - Send IMs and teleport offers - Animate one's avatar by clicking on an object	

In a similar fashion to module 2, in module 3 students took part in discussions, role-plays and virtual field trips to prepare their final guiding task.

In the first session, students visited a Tourist Information Center (TIC) and looked at leaflets advertising different holiday destinations. Students got into pairs and performed a role-play, one student played the role of tourist and the other student worked at the TIC and had to give suggestions and recommendations based on the guest profile. After the role-play, the teacher took the students on a virtual field trip of Rome and Fez and modeled language that they would need to use.

In session two, students got into pairs and chose a city they would like to prepare a guided tour on. When they chose the city, the teacher gave them a notecard with landmarks or links to different locations of interest in the virtual city as well as guiding language and questions to prepare the tour (see figures C11, C12, C14, C4 in appendix C for materials and snapshots). Students were asked to choose three interesting landmarks for the tour and prepare them during the session. At the end of the session, they were to report their findings.

In the last session, students warmed up with a guessing game. Each student had to think of a city and give the rest of the class clues such as important landmarks for the rest of the class to guess. In the second part of the class, students delivered their final city tour to the rest of the group (see figure C15 for snapshot).

5.3. Methods of data collection

Context is an essential factor for qualitative and ethnographic research. The researcher of this study was also the teacher of the group from which data was gathered and therefore she was very familiar with the context of the data collection.

According to Erickson (1981b) the two main sources of data collection are *asking* and *watching*. Furthermore, there are many other additional sources such as learner and teacher journals or teacher and school documentation. For this research, a range of ethnographic data

collection methods were used, the primary data were the sessions' audiovisual screen recordings (observation data), however, there were also pre-questionnaires and during/post questionnaires (asking), and the researcher kept a field notebook. In this section, each of the research instruments used for data collection is described.

Table 10 illustrates the tools used for the data collection as well as the format in which the information was stored.

Table 10

Overview of the data collection methods used in the study

Data collected	**Demographic questionnaires**	**Module Questionnaires**	**Second Life recordings**	**Interviews**	**Researcher journal**
Amount of data	12 questionnaires	8 questionnaires x 8 SS=	8 sessions, a total of 8 hours	8 interviews of about 10 min each	9 journal entries
Format of data	Google Forms, spreadsheet file (.xls)	Word document (.doc)	.mov	.wav	Drive document (.doc)

5.3.1. Demographic questionnaire.

The questionnaire is a tool used in ethnographic research to gather information that is not directly observable and that may help to understand the observed behavior (Allwright and Bailey, 1991).

During the second week of the course, students were taken to the computer lab for the *Second Life* Orientation session. Before starting the orientation session, students were given a link and asked to complete an online pre-course questionnaire to ensure its return and to allow the students to ask the teacher any questions they may have while answering the questionnaire (see appendix D). The questionnaire was designed using Google Forms to facilitate administration, data collection and treatment.

The purpose of this questionnaire was threefold. Firstly, to obtain demographic information about the participants, such as gender, age or year they were enrolled in. In the

second place, information about their language profile was collected: L1(s), years studying or exposed to the target language, speaking proficiency in English as well as their preferred learning activities. The third aim was to know about the students' ICT proficiency, experience learning a foreign language online and whether they had any experience with *Second Life*.

5.3.2. Second Life class recordings.

In order to carry out this research, a piece of land was rented from the New Media Consortium[10], who rents lands to educational institutions in *Second Life*. This piece of land, which was named *CETT Island,* served as the class headquarters. Different objects, props and buildings were placed and removed from this land, depending on the needs of the lesson. For example, in module 1 there was a hotel on the land, whereas in modules 2 and 3 the hotel was replaced by a carpet with cushions. Furthermore, module 2 had pictures of the Beatles and of The Scream painting to introduce the content of the sessions, whereas these pictures were substituted by pictures of San Francisco and Paris in module 3.

Each class was divided into group A and group B, as a high number of students in the same space in *Second Life* produced technical issues such as lag and sound problems. The first group met on Mondays, group A met from 4pm to 5pm and group B met from 5pm to 6pm. The second group met on Wednesday at the same times. Screen recordings from the teacher's computer screen were made of the sixty-minute language sessions held in *Second Life* for each of the groups.

Unfortunately, some class recordings were lost due to different factors. *Second Life* is a software program that has to be installed in the user's computer. This virtual world has

---

10 The New Media Consortium (http://www.nmc.org/) is an international non-profit organization whose aim is to explore and use new media and technologies.

many technical requirements for it to run relatively smoothly: the computer needs a good graphics card, RAM memory and a fast Internet bandwidth. When using *Second Life*, it is not advisable to have other open programs or browsers as it cause produce lag in the program. For research purposes, apart from the *Second Life* program, the teacher-researcher was running a screen recorder too. The most delicate moment for the data collection was converting the recording into a video file after a two-hour class. Sometimes, the computer crashed because the files that the screen recorder created were extremely heavy and the recording was lost. Other times, although the recording was converted into a video file, one of the audio channels had not been recorded, hearing only the teacher's voice. In 2010 *Second Life* was not a stable program, users could at times experience unexpected technical problems like the audio channel not working or avatars freezing.

A total of 17 hours and 5 minutes was collected taking into account both groups. However, due to the vastness of the recordings, the data object of analysis was reduced and the researcher selected the Wednesday group, which amounted to nine hours and 35 minutes of recordings. The selection was made on basis of the group that had most recordings.

Table 11 illustrates the *Second Life* session recordings. The boxes in grey are sessions in which the video recording is unavailable. The white boxes that have no numbers mean that the recording was roughly one hour, whereas the boxes that have a number indicate the minutes available for that session. In the case of the first session of module 1, there was a conversion problem and the video only covers the first 35 minutes of the session. In the last session in module three, there are three group-sessions instead of two because there was a group who could not attend the last session so an appointment was scheduled with the teacher so that they could present their final task.

Table 11

Overview of availability of Second Life class recordings

VIDEOS	**M1: HOTELS**		**M2: MUSEUMS**			**M2: TOURS**			**Total Time**
	S1	**S2**	**S1**	**S2**	**Tour**	**S1**	**S2**	**Tour**	
Monday A								25’	7,30
Monday B								75’	
Wednesday A	35’		21’					60’ 70’ 30’	9,35
Wednesday B									

As stated in section 4.1.1. in this chapter, the researcher had the dual role of teacher as well as researcher. Thus, the effect of being observed was drastically minimized as the students were in a learning situation with no external observer. Furthermore, online environments allow for the use of unobtrusive tools for recording, as screen recordings are invisible to the rest of the participants.

The *Second Life* sessions that took place were recorded, but because the students logged in from different locations, the only recordings that are available are the teacher’s, thus missing the students’ interface activity or private messages. It was deemed too burdening to ask students to record their *Second Life* sessions, as the students were all new to *Second Life* and the learning curve was steep. Furthermore, the program was already too heavy for some of the students’ computers.

The classes and screen recordings were carried out on an iMac Pro (2.8 GH Intel Core 2 Duo Processor and 2GB 800MHz DDR2 SDRAM Memory). iMacs in 2010 were deemed suitable for running *Second Life* because SL needs a good graphic card to run smoothly. The screen recording software that was used was SnapzProX[11] by Ambrosia Software Inc., which saved the screen recordings as QuickTime® movie files. This software was selected because

11 For more information see http://www.ambrosiasw.com/utilities/snapzprox/

it met three requirements: it was IOS-based, it recorded two audio channels: the microphone or output channel and the internal audio or input from the program, and it allowed for long recordings, which was important because the program needed to record a two-hour class chunk.

5.3.3. Post-questionnaires.

After each session, students were asked to complete a questionnaire in word format via e-mail (see questionnaires in appendix E). The questionnaires had three parts. The first part enquired about technical problems encountered in class, the second part asked about the student's off-screen activity and the third part was about any communication problems encountered during the language class, including a question about use of non-verbal language such as gestures.

The aim of these questionnaires was to obtain a student-self report of the sessions. Closed questionnaires have the danger of missing insights that could be provided by the participants themselves, beyond the researcher's expectations (Allwright and Bailey, 1991). With the aim of capturing student insights, closed questions were avoided. The questionnaire had a few semi-directed questions to lead the student in the self-report, but they were open enough for students to provide information.

5.3.4. Researcher field journal.

The researcher had a field journal that she kept during the whole experiment. The researcher wrote an entry after each session in which she specified the students who attended the class, absent students, and any incidents that occurred in the session. The researcher also wrote contextual information such as dates and times for the session and any information that was relevant to the study. This proved useful when analyzing transcripts to provide contextual information that helped understand certain parts of the data.

5.3.5. Ethical dimension.

The main tenets underpinning ethical research are related to participant confidentiality and that research must not harm the participants in the study. However, there are some new ethical issues that arise when dealing with online ethnography. In presenting the transcript came the concern of whether it was needed to disguise the identities of the participants, as they had already chosen a pseudonym to create their fictional avatar. It was decided that it was not necessary to hide the pseudonyms they had chosen as they created an account specifically to participate in the study. Nevertheless, only the first name of the students who had chosen to use a pseudonym in *Second Life* was used. Most students, however, chose their real first name, although all of them have a fictional last name; nevertheless, a code was given to protect their anonymity.

It is important to highlight that participation in this study was voluntary. Participants were made aware that they were enrolling in a special group during their enrollment period in September. Furthermore, students who had enrolled in this group were not made to participate. They were explained the details of the research study, how the data was going to be collected, including the fact that they were going to be recorded, and the intended use of the study. They were also made aware of the benefits they would get from this: they would obtain additional practice in the target language, this practice would help them prepare for their final task in the course, and they would get extra credit in this course. The participants were free to contact the researcher if they had any questions or wanted to withdraw from the study. Students who wanted to take part signed a consent form.

5.4. Data analysis

This case study has drawn on qualitative ethnographic methods, and the main research instrument used was computer-mediated discourse analysis (CMDA) based on the video recordings of the classes that took place in *Second Life*. However, using a case study

approach also allowed for quantification at certain stages of the study, which helped in the analysis of the data to provide more holistic interpretations (Yin, 2003).

This section starts with theoretical approach that guided this study and then follows on to detail the 3M transcription method, a method especially designed to transcribe and analyze data in a 3D multimodal environment.

5.4.1. Computer-mediated Discourse Analysis (CMDA).

Computer-mediated discourse analysis or CMDA is part of the broader field of research of CMC. This approach applies different methods from linguistics (pragmatics, discourse analysis, conversation analysis, sociolinguistics, ethnography communication) to CMC and may use qualitative or quantitative methods (Herring, 2001). The main focus in CMDA is the analysis of verbal interactions taking into account the context where the interaction is produced.

CMDA assumes that discourse involves speaker choices that are conditioned not only linguistically, but are also conditioned by cognitive and social factors. Thus, CMDA adds the assumption that online communication is also 'shaped by features of computer mediated systems' (Herring, 2004a).

Communication through computer networks is considered by some researchers as a different form of communication rather than a form of 'writing'. The rationale behind this is that CMD exchanges are faster than written exchanges, but slower than spoken exchanges. Also, multiple participants can communicate simultaneously which is difficult or not possible in other media (Herring, 1999a).

CMDA can be applied to a diversity of topics and levels of analysis. CMDA focuses on five areas or levels of language (Herring, 2004a):

a) **Structure**: includes the use of special typography or orthography, new word formations and sentence structure.

b) **Meaning**: meanings of words, utterances and larger functional segments (e.g. 'macrosegments', Herring 1996b).

c) **Interaction**: turn-taking, topic development and other means of negotiating interactive exchanges.

d) **Social behavior**: linguistic expressions of play, conflict, power, group membership.

e) **Participation patterns**: frequency and length of messages.

With the expansion of online forms of communication, there is a need to find a way of classifying and analyzing CMD. Herring (2007) proposes a faceted classification scheme. This scheme is based on two factors that shape CMD communication, medium and social factors:

a) **Medium and channel factors**: they have to do with the technological features of the medium. Some of the most important medium factors include: synchronicity, message transmission (one-way or two-way), persistence of transcript, size of message buffer, channels of communication, anonymous messaging and private messaging (p. 13).

b) **Social factors**: they are factors associated with the situation or context of communication. They include information about the participants, purposes for communicating, and what they are communicating. These factors assume that context can shape the way people communicate. Some of the most important factors include: participation structure, participant characteristics, purpose, topic or theme, tone, activity and norms (p. 17-19).

Medium variables in the different message systems influence the language that is produced. Physical properties of the messaging systems that can shape language include whether the message transmission is one-way or two-way (Cherny, 1995). In a one-way

transmission, messages are transmitted as a single unit. The recipient of the message does not know that a message is being sent to them until it arrives. Thus, there could be simultaneous messages being written at the same time (Herring, 2007). Another defining feature that has an influence on language is the number of available channels of communication such as text, audio and/or video (Hampel & Stickler, 2012) as well as the synchronicity of the channels (Condon & Cech, 2010).

Thus, not only are social factors important, but also medium variables need to be accounted for when undergoing discourse analysis in an online environment.

5.4.2. Multimodal discourse analysis (MDA).

All discourse is inherently multimodal, as it is made up of a number of communicative modes, which include speech, text, gesture as well as the physical medium, through which the discourse is carried out (Scollon & Levine, 2004). Discourse analysis has tended to focus on spoken language, however, an approach that does not take into consideration participant non-verbal actions can distort the interpretation of many interactions (Norris, 2004), thus, multimodal discourse analysis, which focuses on actions, may help to provide a more balanced view of interaction.

Multimodal discourse analysis is conceived from a multimodal socio-semiotic approach. Norris defines multimodal interaction analysis as ‘a holistic analysis of the multiple real-time sequential and simultaneous communicative processes that participants engage in.’ (Norris, 2004, p. 112). She points out that multimodal interaction analysis does not draw a difference between face-to-face and mediated interaction, as all interactions are mediated. In multimodal interaction analysis, there is the assumption that any mode has the potential of being more important than another in a given situation; interaction analysis studies the modal configuration of a situation and how participants make sense and use this complexity of modes. Hence, one of the central concerns in MDA is intersemiosis, which

explores the inter-semiotic or inter-modal relations that result from the interaction of semiotic choices.

Kress & van Leeuwen (1996) and O'Toole (1994) provide the foundations of multimodal research drawing on Halliday's social semiotic approach to language. There have been two focuses in MDA within the social semiotic approach. The first one, systemic-functional discourse analysis (SF-MDA), derives from Halliday's social semiotic approach. Research in this approach has developed frameworks to study the modal affordances of speech, sound and music (van Leeuwen, 1999), hypermedia (Lemke, 2002), action and gesture (Martinec, 2000). In mid 2000 the focus of research shifts to language in integration with other resources with the acceptance that communication is multimodal and not limited to language but rather is a result from the interplay of several modalities. From this situation, a second line of interest emerges, the focus of study being interactional multimodal analysis (Norris, 2004; Jones & Norris, 2005; Scollon, 2001; Scollon & Wong Scollon, 2001). This concept comes from the concept of mediated discourse analysis and derives from interactional sociolinguistics and intercultural communication (O'Halloran, 2011).

5.4.3. Transcripts as tools for MDA.

One of the main tools in discourse analysis is the use of transcripts. As Cameron (2001) states, without a written representation, spoken discourse is impossible to analyze systematically. Thus, studies of interaction have used different transcript models to transcribe classroom interaction (Calsamiglia & Tusón, 1999, Cambra, 2003; Schiffrin, 1994). These transcripts focus both on the superficial structure of enunciation and those non-linguistic elements that are used by participants in the language classroom. As can be seen from the great number of available transcripts, there is no 'standard' transcription method as the chosen method depends on the focus of the researcher's study and thus, the transcript should

be adapted to the researcher's needs. Furthermore, the researcher will always need to make certain decisions that will affect the transcription.

Many studies have transcribed and analyzed interactions that occur in CMC environments the same way as a face-to-face class. However, when studying a language class in a virtual world, these transcripts become insufficient. Although language classes carried out in virtual worlds share some traits with the face-to-face classroom[12] there are some features in virtual worlds that are irrelevant or non-existent in face-to-face classroom contexts such as avatar gestures and animations, avatar movements (jumping, flying, walking, running, dancing), media elements which come into play within the environment or interface information (action that the person does on the computer program). Multimodal transcripts can help to bridge the limitations that face-to-face transcripts present when analyzing communication in multimodal environments.

5.4.4. Multimodal Transcriptions.

There is a rising interest towards the different communication modes that intervene in different types of media. Several researchers from the socio-semiotic field have suggested several multimodal transcription methods. These transcription methodologies show how meaning is created through the interaction of different modes. Some relevant examples in this field are Baldry (2004) who develops a multimodal transcription to analyze a car advertisement, O'Halloran (2004) who carries out a multimodal analysis in films and Williamson (2007) who studies the multimodality in written press.

In the linguistic field, qualitative discourse analysis usually adds non-verbal data relevant to the research in brackets, as a complement to the verbal mode. However, Norris (2004) argues that although all the communicative acts that correspond to nonverbal behavior can be transcribed, a multimodal transcript that incorporates images is a richer way to

12 For more detailed information on this issue see Sweeney et al, 2010

understand interaction and to get nuances that may be lost in the transcription. Norris (2004) states that multimodal transcripts should fulfill two purposes: allow for the analysis of multimodal interactions and (2) allow the presentation of complex multimodal analysis to others.

Norris (2004) points out that multimodal transcripts of one interaction, entail several transcripts. At the initial stages of analysis, transcripts of the different communicative modes are kept separate. At a second stage, modes are combined to understand how meaning is created.

Benzemer & Jewitt (2010) also provide a suggestion on how multimodal data should be analyzed. They point out that multimodal transcriptions are very intensive, it can take hours to transcribe an excerpt which is only a few minutes. Thus, when studying all the modes involved, it is generally not feasible or necessary to analyze all the video of a lesson in detail. They report that after the videos in their study were viewed, the data was sampled to select instances that were relevant to answer their research question. Then these video chunks were viewed repeatedly and transcribed. To provide a multimodal account of the video data, they used a column for time and a column for each mode that was described. The modes that they considered that were relevant to the episode were: gesture, gaze, body posture, movement, spatiality, talk, writing/diagram and the teacher's interaction with the book. The authors state that it was analytically useful to analyze the modes individually, however it was also more difficult to analyze interaction that was broken up into separate modes. This problem was overcome in the second phase by analyzing how the different modes interacted together. The third phase consisted in analyzing the communication practices of the teacher through the modes in interaction.

The framework they describe provides different levels of analysis: it starts with a macro view of all the data, then this data is sampled, after that it goes down to a micro level

and analyzes all the modes involved individually, finally it goes up again to see how the modes interact and create meaning at the level of text and interaction.

Bezemer and Jewitt (2010) argue that a socio-semiotic approach to multimodality is still at an early stage and that more research into transcription and language analysis is needed. The balance is very delicate: too much attention to many different modes can make the understanding of a particular mode more difficult; however, focusing on a single mode provides an incomplete account of the meaning-making process.

In this section we have seen that exclusively verbal methods of transcription are limited and provide a partial portrayal of communication. Thus, it becomes apparent that a new transcription method with a multimodal perspective is needed to account for the multiplicity of elements such as the various channels of communication and the different modes that play a role in this environment.

In the following section, a multi-layered transcription method is proposed which accounts for the aforementioned multiplicity of elements of the interactions occurring in this 3D online environment.

5.4.5. The 3M Transcription Method: a tool for multimodal discourse analysis.

In the field of classroom research, Pujolà (2001, 2002) devises a transcription method to describe the on- and off-screen interaction of language learners while engaging with computers. However, there is a paucity of research when it comes to transcribing what occurs in a 3D virtual world a class where the student and the teacher take the form of an avatar as their online representation in a MUVE.

The *3M transcription method* (Pujolà & Palomeque, 2010) was devised after the observation of the class recordings from the class sessions in *Second Life*. This method works at two levels of analysis: a macro level in which the sequences of classroom interaction are observed and a micro level in which the selected instances are described in detail. This

transcription method is based on a coding system that facilitates the storage and retrieval of information.

a) Macro level of analysis

At the macro level of transcription, as in any other transcription method, contextual information is gathered such as the nature of the course, its location –a difference between face-to-face classes and MUVE classes is that the class can be held in any setting within the virtual world– and the participants who have attended that session. However, the information about the participants is much more detailed than in other transcriptions as the researcher gathers data such as the clothes the participants are wearing, their skin and hair color, etc. Also, it should be taken into consideration that a participant can choose what kind of avatar they want to be represented by ranging from a female or male avatar to a child or animal-shaped avatar. There is a wide range of options open to the imagination and expertise of each participant. This information may be irrelevant in a face-to-face classroom, but it gains relevancy in a MUVE context where these details can give the researcher clues to the participants' level or proficiency in the MUVE as well as the reasons behind the choice of a certain shape, costume or item of clothing.

The macro level of the session represents a whole class and it is organized so that the table fits one page. This way the reader can grasp the essence of the whole of the class easily. It is read like a musical score and it is organized in rows that are read from left to right (see Appendix F for an example of the macro level).

The class is divided into scenes. A scene changes when there is a change in class stage and/or class activity or when there is a significant location or camera angle change. The scenes are numbered and on top of the scene the reader can see the duration of the scene. Apart from scenes, there are transitions. Transitions mark a change in scenario or continuous

movement of the camera for a certain number seconds. Transitions usually occur when walking from one activity to the next or when teleporting to a different location.

To make this transcription easier to read and understand, the scenes have then been grouped into classroom activities (A1, A2…) and these activities have been named. Thus, it is easier to locate a specific scene within the context of an activity.

The macro transcription has two aims, the first one, as mentioned before, is for the reader to get the 'big picture' of the sequence of the class (Benzemer & Jewitt, 2010). In ethnographic research, the macro level of analysis plays an important role, as the researcher has to take into account the holistic dimension of the data, which is important to interpret the data when analyzing the data at a micro level. The second aim is to zoom in on those sequences where the researcher is going to develop the microanalysis and locate it within the context of the whole class. To mark the selected scenes for the microanalysis, a snapshot of the picture is added to the scene and the cells have been shaded.

b) Micro level of analysis

As stated before, the microanalysis is only devoted to those scenes that the researcher has selected previously from the macro analysis. As Benzemer & Jewitt (2010) point out, a microanalysis of the whole event often too insurmountable. The micro level of analysis has two stages. Figure 15 illustrates the first stage.

SCENE	
DESCRIPTION	- **Scene description**: participants are outside the hotel, around the fire. - **Pedagogical description**: T is greeting the students, checking that everyone is there and that everybody is ready to start the class. T tries to get students into a circle to start the class. - **Participants**: teacher (T), Maia (MaBe), Meri (MeBa), Kitus (KiBe), Ruth (RuDo), Tony (ToSp), Timay (TiTr), Jordi (JoDa), Elsa (ElMc), Laia (LaAd), Silvie (SiHe), Ariadna (ArCh)

Figure 15. Description of the selected scene for the micro analysis

As can be seen in figure 15, this first stage consists of a general description of the scene. This description includes a snapshot of the scene and a second row devoted to a description of the scene where the activity is taking place, the nature of the activity and the participants who are involved in the event with the abbreviations used for each participant.

It is in this micro stage where the multi-layered transcript is used. To account for the multimodal nature of this world, alongside the video recording of the class session, three transcripts have been created to transcribe the communication that occurs in the different communication modes as well as the interface activity. The first transcript records the communication that occurs through the verbal mode, which includes audio and written modalities (both the local chat and the IM channels), the second transcript records the non-verbal mode and the third transcript accounts for the user's interface activity to manage the program (e.g. how the user manages the windows in the program, inventory management, etc.) (see appendix F for an example of the micro level transcription).

Apart from the multi-layered transcript, when a communication strategy occurs across different modes or in several turns, the turns are linked to each other. Table 12 illustrates an example of a teacher strategy that is present in different modes. Turns that are part of the same strategy or discursive sequence are linked with the same number. Thus, when a communication strategy is queried, the researcher can see what modes come into play in each communication strategy.

Table 12.

Illustration of a strategy across the verbal and non-verbal modes

VERBAL	NON-VERBAL
(0:00:00.0) T: can we make a circle here? around the fire?	
(0:00:22.4) T (LC): can we make a circle around the fire	
	(0:00:28.3) Students move around to stand around the fire

This table shows a transcription of the illustration in Figure 15. We can see that the teacher uses the audio channel to give an instruction on the avatars' proxemic positioning. The teacher repeats her request through a channel switch into the local text chat. Six seconds after the written request, the students form a circle around the fire.

Thus, modes are transcribed separately during the first stage to facilitate the analysis, but when a discourse sequence is queried, the modes appear together to understand how meaning is created together through the combination of modes (Norris, 2004).

5.4.6. Transcription of the *Second Life* sessions.

For this study, the researcher decided to carry out a micro transcription of all the sessions in order to analyze the class as a whole and gather information about the turns in the different modes and modalities, number and length of turns per participant as well as the function of the turns. Since multimodal transcriptions are very labor intensive, data reduction was applied and the multimodal transcriptions were made on one group out of the two.

Transana™[13] software was used to transcribe the *Second Life* sessions. Transana™ is an open-source multi-platform software program created by David K. Woods at the Wisconsin Center for Education Research (University of Wisconsin-Madison) and it is specialized in the transcription of multimodal files. This program allowed the researcher to import the videos to the program and have the video window alongside the transcription window. Furthermore, the program enabled the researcher to place a time stamp at the beginning of each turn, which linked the transcription to the video. These functionalities made the transcription process faster and more efficient. Unfortunately, Transana™ had very limited coding functionalities, so it was only used to get a general transcription of each session.

The researcher then looked for other qualitative analysis programs that fulfilled her research requirements. Firstly, the program had to accept video files; secondly, the program had to allow for several transcriptions for one video file and the last requirement was that the researcher had to code the different transcriptions and some codes would link turns from different transcriptions. The researcher found programs that fulfilled the first two requirements, however, at the time of coding, she found no program that allowed for inter-transcription coding.

It was decided then that a special program would have to be created. The transcriptions were exported as .rtf files from Transana™ and then uploaded to the 3M program, a software specially designed for this dissertation (for more information, see appendix G). The 3M program is a web-based software which has four windows. The window on the top row shows the video and there are three more windows devoted to three different transcriptions: verbal mode, non-verbal mode and interface (see figure 14). This

[13] For more information visit: http://www.transana.org/index.htm

program allowed to capture and transcribe both verbal and non-verbal actions and link them to the video file (see figures G1 and G2 in appendix G). It also allowed to link actions or strategies that made use of more than one mode (see figures G3, G4, and G5 in appendix G). This allowed the researcher to study the role and inter-relationship of the different modes during communication in a MUVE class.

When the transcription was uploaded to the 3M program, the turns were sorted into: verbal, non-verbal and were sent to the appropriate transcription box. After that, the videos were viewed again to add more interface and non-verbal annotations that were missed in the Transana™ transcription.

The modes were first transcribed separately during the first stage to facilitate the analysis, but when they were queried, the modes appeared together to help understand how meaning was created together through the combination of modes (Norris, 2004).

5.4.7. Transcription conventions.

For the present study, it was important to devise a method of analysis that focused on the different modes of communication. Thus, the transcription of both the verbal, the non-verbal and the interface as well as the video of the session were important to shape the transcription and to help in the later interpretation of the data.

The transcription of the verbal mode was based on an adaptation of face-to-face transcription conventions. However, non-verbal behavior in a virtual world is different to a face-to-face interaction, so some conventions based on the nature of this online environment needed to be designed. A list of expected behaviors was created and after viewing the first sessions, the list was then modified during the observation of the sessions if new behaviors appeared.

A similar procedure was followed for the interface transcription. However, instead of starting with a pre-designed initial list as with the non-verbal mode, the actions the teacher performed on the *Second Life* program were transcribed.

Thus, the research method was adapted to the nature of the setting and the communication modes available. The aim of this research is not to provide dogmatic conclusions, but to obtain a description of a communicative event based on a specific online context and participant profile and a specific data collection and analysis method.

There are many models of transcription criteria available, which depend on the researcher's aims. Following are some considerations that were taken for the transcription process (see appendix K in CD for transcripts):

- Each turn is preceded by a timestamp that marks the start of the turn. The turns are linked to their corresponding video time.
- Each turn also specifies the sender. Each participant has been given a code to protect anonymity.
- The channel is only specified if it is a text turn, as there are two possible channels: public local chat (LC) and private instant message (IM). Voice turns are found in the verbal mode and kinesic, proxemic or appearance turns are found in the non-verbal mode.
- Standard spelling conventions were followed to transcribe the turns, it is not a phonetic transcription.
- The participants' lexis, phonetics, syntax and spelling have been respected and their errors have not been corrected.
- A new turn is initiated when a pause is longer than three seconds.

The macro transcription provides an overview of the class activities, scene and time. There is a second table that provides the following contextual information (see Appendix F for an example):

- Session
- Group
- Date
- Duration
- Participants' names
- Objects and props used in the class
- Class aims

a) Transcription conventions for the verbal mode

The transcription code for the verbal mode was and adaptation of Calsamiglia and Tuson's (1995) and Atkinson and Heritage (1984) transcription models (see Appendix H for transcription conventions).

b) Transcription conventions for the non-verbal mode and the interface

Regarding the non-verbal mode, the turn started by specifying who the agent of the action was followed by the action. For example:

JoDa sits on the carpet and joins the circle

A list of non-verbal behaviors was made to facilitate the coding process. There were two types of behaviors: avatar related and environment related (see Appendix I for codebook).

Concerning the interface, the researcher described the different actions that the teacher performed on the *Second Life* interface like:

Teacher opens inventory

5.4.8. Units of analysis.

The decision on the unit of analysis is essential to interpret interaction at a later stage. It was important to choose a unit of analysis which would allow the researcher to analyze online discourse strategies at an interaction level but that would also allow for an appreciation of the macro level.

The first macro unit of analysis to understand the interaction produced in an online ESP class is the teaching sequence. This study takes place within a teaching-learning context. The teaching sequence has a syllabus with aims and contents. Within this teaching sequence the teacher activates a series of learning activities that will generate interaction (Cambra 2003). This teaching sequence is composed by a series of sessions, which is the second macro unit of analysis. These sessions have aims, contents and learning activities.

Many authors in the linguistic and ethnographic field identify the next level of analysis as the segment, episode, stage or sequence. According to Cambra (2003) a segment has to fulfill three requirements: an activity or learning task, the theme and the participant constellation. In the present data, each session is divided into classroom contexts, based on Seedhouse's (2004) classification regarding types of classroom interaction. A class session is composed of different contexts such as meaning-focused, task-oriented or procedural, which entail different types of interaction.

The abovementioned units helped to obtain macro view of the data. Concerning the micro perspective, two units where used: the discursive sequence and the turn.

In order to analyze the discourse strategies that the teacher used with her learners as well as what triggered the strategies and what the student reaction was, the turns that intervened in a communication strategy were grouped, and this unit of analysis was called *discursive sequence*. These turns were linked thematically and included the trigger and the student reaction. Usually the sequence was composed by the sequence question/request and

answer or follow-up questions that depended on the previous answer as well as any non-verbal action involved. This category proved useful to group together non-verbal behaviors or interface actions that intervened in the strategy. The discursive sequence can be seen as the context in which the strategy is produced.

The last level of microanalysis is the turn for the verbal mode and the action for the non-verbal mode.

Regarding the verbal mode, Tudini defines turn as "each time the floorspace is transferred from a participant to another, regardless of its length" (Tudini, 2003b, p. 148). In oral participation, a new turn occurs every time there is an utterance after a long pause (more than three seconds) or when there is a change in speaker.

Concerning text participation, Thorne (2000a) develops the concept of e-turn, which is based on the turn, and is defined as " a communicative unit that takes its on-screen form from two sources, 1) the way the MOO server receives, orders, and recasts input, and 2) the form and content of the message as typed by the user" (p. 3). The textchat e-turn is bounded and finished every time that the user presses 'send' (Pasfield-Neofitou, 2009).

For the visual mode, the unit of analysis was the 'action', taken from the concept of 'embodied mode', by which a participant uses a series of different modes of communication through the orchestration of higher-level and lower-level actions. A higher-level action would be a class, for example, and a lower-level action would include utterances, gestures, etc. (Norris, 2004).

This last level allowed gathering quantitative descriptive information such as turn number, duration and channel choice as well as qualitative information such as turn function.

To sum up, the units of analysis used in this study were the following:

- Class session
- Classroom context

- Discursive sequence
- Turn/action

Each session follows the same structure. First the macro overview of the session is provided, which details the class session, different scenes, activities and time in the session. Secondly, there is a box with a contextual description of the session such as location, objects and participants as well as teaching aims. Thirdly, we have the micro-transcription of the utterances and non-verbal behaviors and interface actions with the video of the session.

5.5. Coding

After deciding on the units of analysis and transcribing the video data, the coding process started. Cohen et al (2007) state that codes should 'derive from the data responsively rather than being created pre-ordinately' (Cohen et al 2007, p. 478) while Miles and Huberman (1984) add that coding should start earlier rather than later so as not to weaken the analysis, although there as a risk of the researcher being too strongly influenced by early codes and not allowing later codes to emerge.

Linked to the emic and ethic nature of ethnographic research, the first design of the categories was made *a priori* from existing literature. These codes were then expanded and reduced after the inter-coder reliability session. Also, the codes were adjusted during the whole of the coding process, allowing for new codes to emerge and thus making them relevant to the members of the target community and the context (Saville-Troike, 1982; Cohen et al. 2007).

Another danger in coding is that during the coding process, some codes may become redundant and thus merged into one or some might be split into more discrete codes. Thus, it is important for the researcher to go through the data more than once, to ensure consistency in the coding process (Cohen et al, 2007). The researcher coded each unit of analysis described

in the previous sections separately and went through the data a second time to check for inconsistencies in the coding process.

In order to interpret the results at a micro and macro level, there were three different levels of coding. First, the transcriptions were coded by turns and actions, then they were coded by online discourse strategies and discourse sequences, and finally by classroom context. The coding unit was the turn or action, although, several turns or actions were grouped together into discourse sequences at the discourse strategy level.

5.5.1. Coding of verbal turns and non-verbal actions.

Following Wigham (2012), two different types of turns were identified concerning the mode: verbal turns and non-verbal actions.

a) Coding of verbal turns

The first transcription was devoted to the verbal mode. The verbal mode is comprised of two modalities: the audio modality and the textual modality. Each turn had a time stamp and was coded by sender, addressee, modality, function and lesson context.

The textual turns were transcribed with a time stamp provided in the chat log to indicate the start time. The times given in the text chat log are given in *Second Life* time and therefore do not coincide with the video time. *Second Life* displays the time and the avatar name before the text message.

Table 13.

Types of turns in the verbal mode by channel

Modalities	Code	Description
Audible	Voice	Utterance that comes from the avatar. It is visible because there are green waves above the avatar who is speaking
Textual	(LC)	Public chat that is visible within a 20-meter range
	(IM)	Private message

Each turn was also coded by function. These codes are based on Osman & Herring's (2007) classification. They divide the turns into conceptual, when they are task-focused, and non-conceptual when they are procedural, which means that they do not pertain to the task directly, they are concerned with classroom management or social issues

Table 14.

Functional classification of turns

Code	Description
1. Language task-focused	Related to the subject matter or task directly
Task	Related to the task
Form	Linguistic content of an utterance when performing a task
2. Procedural	Not directly related to the subject matter
Logistics	Refers to the completion of task, establish deadlines, groups…
Technical	Functionality and use of communication tools
Social	Small talk, greetings, polite behaviors

For clarification purposes, each turn has been coded using the terms 'language-task focused' and 'procedural' (see Table 14). Wigham (2012) further divides the conceptual turns into task-related or form-related. The following table summarizes Herring's classification, taking into account Wigham's distinction.

Each turn was also coded according to the classroom contexts described by Seedhouse (2004):

- Meaning and fluency context: the teacher's aim is to maximize opportunities of interaction and the focus is on fluency rather than accuracy.
- Form and accuracy context: the focus is on eliciting strings of forms from the students.

- Task-oriented context: learners communicate with each other during a task or group work. The teacher usually steps back and only intervenes when needed.
- Procedural context: the teacher's aim is to set the learning event or the task, to instruct or to establish a procedure of work. Typically it consists of a single long turn.

A further context has been added to this list:

- Social context: the teacher's aim is to greet the class and establish social routines. This typically happens at the beginning and end of the class.

b) Coding of non-verbal actions

To code non-verbal actions, a list of expected non-verbal behaviors was made after viewing the video recordings of the first sessions. The non-verbal actions were classified into two broad groups: avatar-related and environment-related. Avatar-related actions are gestures that come directly from the avatar, while environment-related actions are non-verbal behaviors in which the avatar interacts with the environment.

Avatar-related actions come from the avatar's body and they include gestures or a change in the avatar's appearance, for example, an avatar waving. Some gestures are created automatically by the *Second Life* program, for instance, when a user is typing a message, the avatar displays a typing gesture. Wigham (2012) creates an inventory list that includes both types of behavior. However, the avatar-related behaviors which have been transcribed and coded in this study respond the ones that have been activated intentionally by the user, as one of the aims is to see how participants use the non-verbal functions the program offers as well as observing if they are aware of their communicative purpose.

Environment-related actions refer to how the participants use their avatar to navigate the *Second Life* environment. There are two types of acts: kinesic and proxemic. The kinesic modality describes the movement that avatars perform within the environment of *Second Life*. As with avatar-related actions, a list of expected kinesic behaviors was made based on

the observation of the recordings of the first sessions. The proxemic modality is concerned with how avatars use the layout of the space as well as the distance between avatars in a class.

c) Coding of interface actions

Any actions that the teacher performed on the *Second Life* interface to manage the *Second Life* session were recorded as 'interface actions'. A first list of expected actions was created and then this list of actions was expanded upon the observation of the *Second Life* session.

5.5.2. Coding of discourse strategies.

One of the main aims in the research involves the identification of online discourse strategies that a teacher uses in a virtual world to manage a class, to create a comfortable learning environment, to make interactional modifications and to provide corrective feedback.

a) Online discourse strategies

Online discourse strategies are the strategies users perform in the virtual worlds to make communication more effective and avoid communication breakdowns. Many researchers have focused on learner online strategies (Peterson, 2008, Werry, 1996, Herring, 2001). However, this study focuses on the teacher's use of online strategies. These strategies have been divided into two types following Peterson's (2008) classification: transactional and interactional strategies.

Transactional strategies are strategies focused on the transmission of information, and interactional strategies are concerned with establishing and maintaining inter-personal relationships. Within the transactional strategies, there were three types of strategies that were identified: netspeak strategies, multimodal strategies and technical strategies.

Netspeak strategies are employed to facilitate the exchange of information, avoid communication breakdowns and save time when undertaking tasks in an online environment. A classification of netspeak strategies has been made based on studies carried out by a number of authors who have described online discourse in text-based MOOs and graphic virtual worlds or MOOs (Werry, 1996; Herring, 1999; Cherny, 1995; Peterson, 2008).

A list of strategies related to the use of different modes in the virtual environment was created, which were labeled 'multimodal strategies'. Some strategies were related to the visual mode and others were related to the inter-relationship between the text and the voice channels. Although addressivity is a strategy found in online discourse in several CMC studies, 'visual addressivity' (Naper, 2011) was also added to the list as it made use of the visual mode. Visual addressivity was coded when a participant positioned his/her avatar facing the avatar he/she was speaking to. Wigham (2013) studied how students referred to in-world objects. Following her classification, the data was coded based on the different ways participants referred to an in-world object, which could be either verbally, through the use of terms or deictics, or visually, by pointing or positioning the user's avatar near the object that was being referred to. Other multimodal strategies identified were channel switches and location checks (see codebook in appendix I to see the codes used as well as their definitions).

The final group of transactional strategies were technical strategies. Technical strategies are messages related to the technical nature of the environment. The list was created after observing the first video recordings and expanded the list during the coding process (see codebook in appendix I).

Interactional strategies were the second group of online discourse strategies what Peterson (2006) identified. The term 'interactional strategies' refers to behaviors designed to establish and maintain social bonds in online communities. The strategies in these sections

have been taken from different authors. The strategies that were identified were: use of character names (Werry, 1999), continuers, politeness strategies, greetings and leave takings (Herring), use of humor, and MUVE talk (see codebook in appendix I).

b) Teacher interactional modification strategies

According to Lynch (1996) there are three reasons why teacher language modifications are important in classroom discourse: they aid comprehension and progress, the teacher models the target language and influences learner language, and without simplification or reduction the students are likely not to understand. To sum up, teachers engage in interactional modifications to help learners follow the class and to ensure that the class flows well.

The interactional modifications selected for this study are modifications based on Walsh (2012) and Lynch (1996) and included comprehension and confirmation checks, clarification requests, self-repetitions and self-reformulations (see codebook in appendix I).

c) Corrective feedback strategies

The corrective feedback codes used in this study are adapted form the codes presented in Sotillo (2005). The strategies listed were: recasts, negotiation strategies, explicit correction and peer correction (see codebook in appendix I).

In order to find instances of corrective feedback in negotiation, all the teacher episodes of negotiation strategies were coded and subsequently, the episodes of corrective feedback triggered by a non-target-like turn were retrieved and coded by type, trigger and student reaction.

Three types of triggers were identified, based on Morris' (2005) classification: grammatical, lexical and L1. The students' reaction to corrective feedback was coded according to Sotillo's (2005) classification:

- Acknowledgement: when the learner acknowledges the corrective feedback.

- No response or topic continuation: when the learner does not respond to feedback.
- Incorporation: when the learner incorporates the target form into his/her output.

5.8. Inter-Coder Reliability

Van Lier (1988) states that one of the major problems in classroom research is achieving objectivity. Consistency or reliability is an important factor in ethnographic research when the researcher is using an observation instrument or coding categories. Before coding large amounts of data, it is important to seek inter-coder reliability, to ensure a degree of consistency between researchers when applying a coding scheme. Inter-coder reliability "represents the consistency with which different members of a research team use a category system or code, [...] the same set of data." (Allwright & Bailey, 1991: 46). The inter-coder reliability figures are usually shown as a correlation coefficient from 0 to 1.00. The closer the decimals are to 1, the greater the consistency between the observers.

Although the data in this study was coded by only one researcher, two additional researchers were asked to code several samples from the data to obtain the reliability for the codes used in this study.

5.8.1. The external researchers.

In order to obtain a degree of reliability, two external researchers were asked to code different samples belonging to transcripts from the corpora.

The first researcher was selected because she teaches English at the university in which this study took place, therefore, she is familiarized with the course curriculum as well as the student profile and levels. Both researchers work in the Modern Language Section of the Education Department in the University of Barcelona as EFL lecturers. Furthermore, both researchers had experience teaching Spanish as a foreign language in American and English universities as well as in language schools. Neither of them had used *Second Life*, however,

they were users of other ICT tools in their teacher such the learning management system *Moodle*, blogs or *Facebook*.

5.8.2. The Inter-Coder Reliability session.

The coders were given three samples corresponding to each of the three modules from the *Second Life* classes. The first sample was used for the training session and the other two were coded independently by the two external researchers.

The inter-coder reliability session took place on 14 December 2014 from 17.30 to 20.00. The first part consisted of the training session (17.30 to 18.30), whose aim was to familiarize the external researchers with the codes used for the current research. During the training session, the researcher went over the codebook, which had definitions and examples for every code. After that, they were given a transcript from the first module, which had already been coded, and the external researchers were asked to look at the transcript and compare it to their notes annotating anything they did not agree with or would change. During the second part of the session (18.30 to 20.00) the researchers were given two samples belonging to modules 2 and 3 respectively and they were asked to code the transcripts using the codebook.

5.8.3. The ICR results.

The inter-coder reliability results showed that 135 events were coded by three researchers, totaling 405 observations (135*3 coders). However, not all of the observations were noted by all three researchers, specifically 116 resulted in a n/a observation. For example:

Table 15.

Example of ICR agreement

Coder 1	**Coder 2**	**Coder 3**	
1.2.2.1.	1.2.2.1.	NA	100% agreement but only 2 observations
1.2.3.1.	1.2.3.1	1.2.3.1.	100% agreement with all three observations

This means that n/a are not as severely penalized as discrepancies. Results show that when a turn was coded there was usually a 100% agreement rate, but they were not always coded by the three coders.

The measure of agreement selected was Krippendorff's alpha, which allowed for the measurement of more than two raters. To calculate the agreement, the annotations for each researcher were put in different text files and fed into an online calculator for inter-rater agreement with multiple raters[14].

The results were the following:

Table 16

Krippendorff ICR rate

Krippendorff
D_obs = 0.024
D_exp = 0.883
Alpha = 0.973

[14] This calculator for ICR was designed by Geertzen, J. (2012). *Inter-Rater Agreement with multiple raters and variables.* Retrieved on December 27, 2014, from https://mlnl.net/jg/software/ira/

The results show that the alpha number is 0.973, so the decimals are very close to 1, which would be a 100% reliability rate. Thus, the high reliability indicates that the codes used shared a high consensus rate and, therefore, could be considered valid.

Chapter 6: Analysis

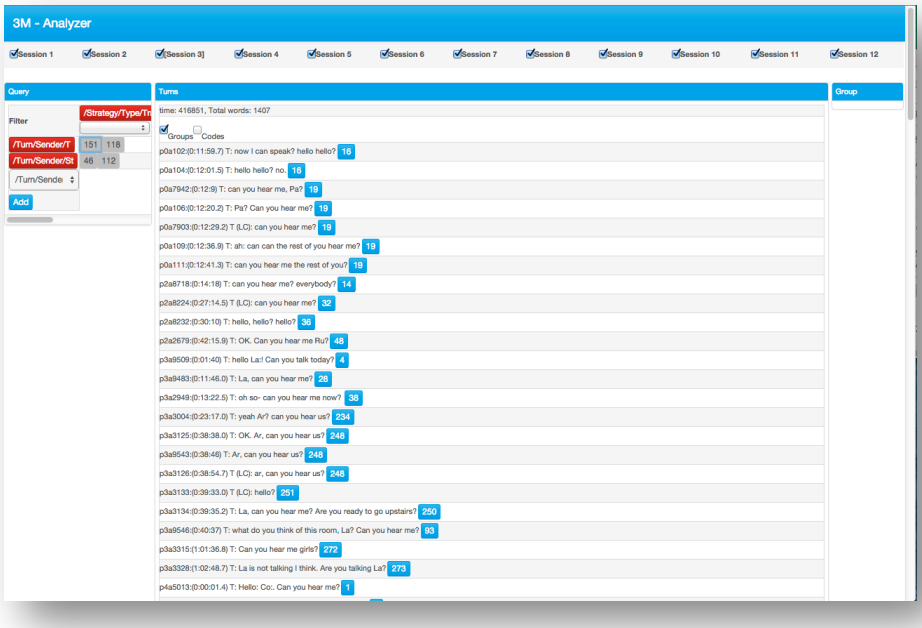


Figure 16. The 3M code analyzer interface

In order to analyze the online discourse management strategies that the teacher used in this MUVE, the screen recordings of the sessions were transcribed and coded using the 3M software program. This program was used to code the turns that contained a teacher or student online strategy, including both verbal and visual modes, and link them to the screen recording.

Each turn had a start timestamp and the audio turns also had an end timestamp to obtain the duration of the act. The turns were also coded by sender (teacher or student), addressee (teacher, student, group or class), mode (audible, textual, visual) and channel (voice, LC, IM, gesture…), function and lesson stage.

This chapter analyzes the online discourse management strategies, teacher interactional modifications and corrective feedback strategies as well as the communication modes used in the virtual world of *Second Life*. Each section starts by analyzing the strategy

or interactional device found in the data as a whole and ends by focusing on two specific activities from the last module: a teacher-led discussion activity and a student-led tour.

6.1. Online Transactional Strategies

This section describes the online transactional strategies found in the data. Transactional strategies refer to those strategies focused on the transmission of information. Seven online transactional strategies were found, three were focused on online discourse in a MUVE: addressivity, feedback markers or backchannels, and time-saving devices. The other four were technical strategies used to deal with or avoid communication breakdowns such channel checks, reception checks, reception confirmations, identity checks.

6.1.1. Addressivity.

Addressivity, which involves indicating explicitly the intended addressee of the message, is a strategy that was widely used by both the teacher and the students and was mainly found through the voice chat. The teacher incurred in 588 instances of addressivity, only 55 of which occurred through the text chat. This was the second most frequent transactional strategy for the teacher and it was found in 21.5% of the total teacher turns.

6.1.1.1. Position of addressivity within the turn.

Three different types of addressivity were found based on where the name was located in the turn: beginning (190 instances), middle (253 instances) or end of the turn (145 instances). The preferred addressivity position was placing the name in the middle of the utterance, as it accounted for almost half of the instances of addressivity. Nevertheless, the three positions, beginning, middle and end, registered a high frequency. There was no significant difference found regarding the different positions of this strategy within the turn.

There were two other types of addressivity found, which did not involve the explicit naming of the recipient: *generic addressivity* and *zero addressivity*. *Generic addressivity* consists in addressing the group as a whole using generic words such as *everybody* or

everyone. The teacher used this type of addressivity to emphasize the fact that the turn was addressed to all the participants in the class. There were few occurrences of *generic addressivity*.

In the following example, there was a lot of background noise that was causing interferences in the class. The teacher switched to the text channel and used a generic pronoun to ask the whole class to turn off their microphones.

p1a9183:(0:00:28.3) T: (LC): ***EVERYBODY****, CAN YOU TURN OFF YOUR MICS?*

Generic addressivity was used with a phatic function because, although the generic pronoun was not necessary, it was used to call the attention of the whole class and request a response, in the case of the example above, to turn off their microphones.

Zero addressivity refers to the absence of any form of explicit addressee. As with *generic addressivity*, it occurred mostly when the messages were addressed to the group as a whole.

In this example, students are about to start a class and the teacher asks if everyone is ready.

p4a7292:(0:19:07.0) T: OK! are we ready?
p4a7293:(0:19:11.5) JoDa: yes

Zero addressivity, which is the least phatic form of all types of addressivity, was usually used when there were no communication problems or problems with the class flow.

Finally, there was one last type of addressivity found, visual addressivity, which takes into account the avatars' proxemic behavior in the MUVE. This type of addressivity will by analyzed in section 6.5.3.4. of this chapter.

6.1.1.2. Addressivity and classroom context.

In the following chart, we can see that addressivity was found in all classroom contexts, but it had a special relevance in the procedural and fluency classroom contexts.

However, in the procedural context most turns had a technical function, wheras the task function was the dominant function in the fluency context.

Addressivity was used for different purposes at varying degrees (see Figure 17). Logistics and technical were the functions that had a higher density in addressivity, with 210 and 223 instances found respectively. Addressivity with a task-function had 123 occurrences and the social function only registered 27. On the other hand, addressivity was hardly used when the function was focusing on language form, as only five instances were found.

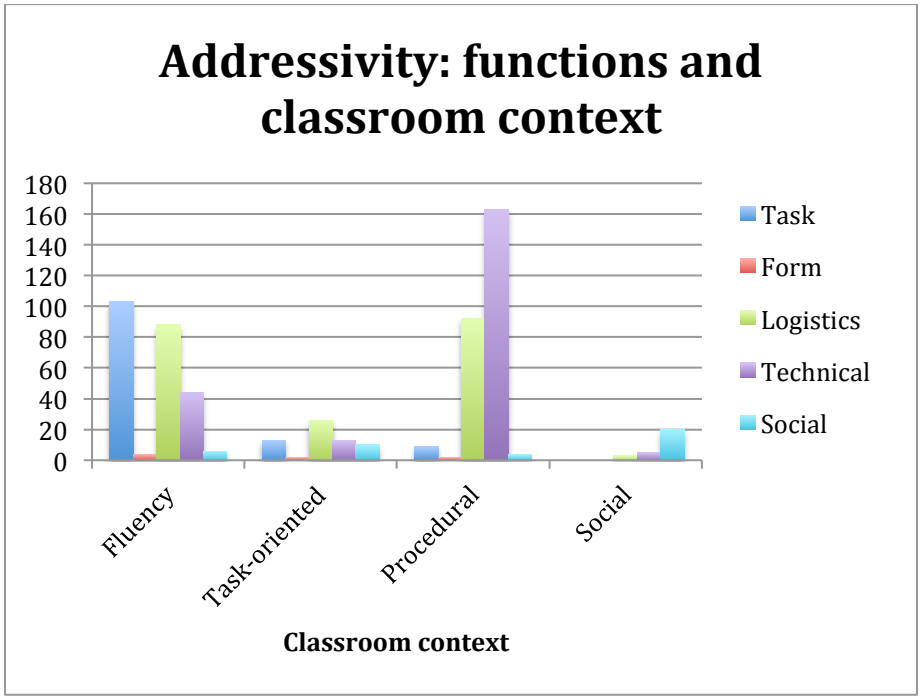


Figure 17. Teacher addressivity functions classified by classroom context

a) Procedural context

This context accounted for the highest number of addressivity turns, 262. Most of the instances of addressivity had a technical function (163) followed by a logistics function (92).

There were different uses of addressivity with a technical function:

- Channel checks.

The teacher used addressivity when checking if the students' sound was working. Channel checks will be analyzed in more detail in section 6.1.5. in this chapter.

p0a7942:(0:12:9) ***T: can you hear me, Pa?***
p0a7902:(0:12:18.4) MaBe (LC): hello??
p0a106:(0:12:20.2) ***T: Pa? Can you hear me?***
p0a7903:(0:12:29.2) T (LC): can you hear me
p0a108:(0:12:34.3) ElMc: no she can't!
p0a109:(0:12:36.9) T: ah: can can ***the rest of you*** *hear me?*
p0a7904:(0:12:38.3) MaBe (LC): et sento fatal
p0a111:(0:12:41.3) T: can you hear me ***the rest of you****?*
p0a112:(0:12:44.2) ElMc: yes I can
p0a7905:(0:12:46.4) RuDo (LC): me too
p0a115:(0:12:46.8) T: OK
p0a116:(0:12:48.1) MaCh: yes I can
p0a118:(0:12:48.6) T: ***Pa*** *try with the: volume*
p0a8103:(0:12:49) ToSp (LC): yes
p0a8102:(0:12:49) KeHu (LC): yes
p0a8105:(0:12:55) T (LC): ***Pa*** *try the volume*
p0a8106:(0:12:55) MaBe (LC): ok

In this example, MaBe is supposed to start a role-play, but she is not talking. The teacher starts a directed channel check through the voice channel. MaBe also engages in a channel check through the text channel. The teacher repeats a directed channel check, this time placing MaBe's name at the beginning and the teacher then repeats her channel check through the text chat. Another classmate mediates and tells the teacher that she cannot hear. The techer then uses generic addressivity to make a general channel check, and repeats the general channel check. The rest of the class confirms that they can hear the teacher. The teacher then tries to help MaBe by giving her technical help through the audio channel and then repeats it through the text channel. MaBe confirms that she has received the message.

- Technical instructions.

p0a8109:(0:14:27) T: we're going to be actors here. can I have a volunteer to act in this first picture with the mushrooms? wait let's wait till the rest come in, who's missing? Marta, Elsa? would somebody like to try to uh: act in this one? volunteer? Pa? For example? No, Pa can't hear me
p0a8110:(0:14:57) MaB (LC): what?
p0a127:(0:14:59.7) T: OK ca can somebody: who wants to try? Somebody that can-
p0a128:(0:15:01.5) MaBe (LC): yes yes
p0a129:(0:15:01.8) T: Oh ***Pa****, perfect. What you have to do is, um: right click on the picture, on the painting, and: select, sentarme aqui. you'll see what happens.*

In this example, the teacher asks for a volunteer to interact with a picture in an art gallery. MaBe volunteers. The teacher acknowledges Pa's right to hold the floor and gives her instructions to perform the task.

- Technical help.

Sometimes the teacher provided technical help when students were experiencing problems in the environment.

p11a5945:(0:05:02.4) T: La, can you talk?
*p11a8806:(0:05:07) T: I can-- **La**, I can see green mmm green circles around you, around your head, that means that your voice is working, but you have to make your volume louder.*
p11a8811:(0:05:21.8) LaAd (LC): okk
p11a5947:(0:05:23.8) T: you have to go to uhm control p,
p11a5948:(0:05:50.1) LaAd: [strange fuzzy noise]
p11a8813:(0:05:53.1) LaAd (LC): ara?

In the example above, LaAd is having technical problems. After a directed channel check, the teacher tries to help LaAd to activate her microphone. LaAd still has voice problems and she engages in a channel check in her L1 to see if the rest of the class can hear her.

Regarding the logistics function, addressivity was used for:

- Group formation.

p5a5649:(0:15:21.6) T: OK. Uh: Jo will go to San Francisco, anybody else wants to go to San Francisco?
p5a5650:(0:15:29.8) MaBe: I
p5a5652:(0:15:30.5) T: OK
p5a5653:(0:15:31.9) RD: Paris
*p5a5654:(0:15:34.1) T: and **Ru** said Paris? Is that **Ru**? Who said Paris? **Ru o Pa**? I'm not sure*
p5a8575:(0:15:44.3) MaBe (LC): paris
p5a5656:(0:15:44.9) RuDo: I. Both.
*p5a5657:(0:15:46.7) T: [laughs] OK. So we'll have **Jo and Ma**, San Francisco*
*p5a8576:(0:15:50.3) T (LC): st**: jo, ma***
*p5a5659:(0:15:51.7) T: oh, that's SF and Paris uh: **Ru and and Pa***

*p5a8579:(0:15:58.9) T (LC): paris: **ru, pa***

In this example, the students have to decide what city they want to prepare their tour on and form two groups according to the city they choose. RuDo says that she chooses Paris, however, the teacher is not sure who called for Paris and she enages in an identity check. When she clarifies the group, she then uses the students' names to summarize the groups, first in the voice channel and then in the text channel.

- Organization of classroom layout.

This example shows the beginning of a class, the students are arriving and the teacher is greeting the students and inviting them to sit on the carpet to get ready for the warm-up activity.

*p10a9519:(0:05:21) T: **Jo**, do you want to take a seat? just right click the: cushion and select 'relax'*
*p10a3419:(0:05:27.0) T (LC): **jo**, take a seat*
p10a3420:(0:05:30.4) T: right click on the cushion and select relax ah perfect
p10t9524:(0:05:30) JoDa sits

The teacher uses Jo's name to invite him to take a sit and reminds him on how to sit. Six seconds later, Jo is still standing up so the teacher repeats her request through the text channel again using his name to make sure Jo knows that the request is addressed to him. JoDa sits while the teacher is repeating her instructions on how to sit.

In the following example, the students are returning to the CETT headquarters to end the class.

p2a2796:(0:54:41.3) T: wait let me move because..
p2a8323:(0:54:46) T: uhm yeah lets move a little bit
*p2a8324:(0:54:50) T: **Ru**! Can you move a little bit? if not Keisha is going to... can't uhm land on the floor.*
p2a8324:(0:54:51) Ru moves
p2a8325:(0:55:02) T: [laughs] OK thanks

As the students have the same teleport link, they are all landing in the same place and some avatars are dangling in the air. The teacher asks the students to move in order to let the other avatars land using the inclusive pronoun ‘we’. However, Ru does not move and is not letting Keisha land, so the teacher addresses Ru directly using her name, to which Ru moves.

- Time management.

p11a6180:(0:46:55.4) T: OK, great. Mmm OK, good, uh: ***girls****, you have exactly four minutes before you have to be back at the island, oK? So if you want to decide a little bit uhm what you are going to talk about? in your presentation? Just, you know? wyou don't have to-- do don't read anything, I don't want you to write anything, just, if you could tell us a little bit of what you've visited. In San Francisco. Yes? Is that clear? [2] Co, you can talk, right? You can do a combination of uh: oral and text*

p11a8964:(0:47:29.9) MeBa (LC): ok but i can't speak

p11a6182:(0:47:32.1) T: OK

In this example, the teacher uses the generic addressivity word ‘girls’ to address the group as a whole and remind them of the time they have left before coming back to report their findings.

- To acknowledge the reception of a notecard.

p2a8327:(0:55:03) T: OK, guys! Well now the only thing I need are your notecards. Yeah? Uh: to to give me the notecard remember you have to go to items recientes, and then drag the notecard from the inventory onto my avatar
p2a2799:(0:55:31.7) T: OK I'll give you this note back tomorrow, yeah?
p2a8329:(0:55:46) T: OK! Uh once you've given me the notecard, uhm you can go, yeah? the class is over
p2a2802:(0:55:55.3) JoDa (LC): ok
p2a2802:(0:55:57) T receives ToSp’s notecard
p2a8330:(0:56:04) T: thank you ***To***

In this example, the class is about to end, and the teacher asks the students to give her the notecard they have been preparing in groups. ToSp gives the teacher his notecard and the teacher acknowledges the reception by thanking To and using his name.

b) Fluency context

This classroom context recorded the second highest rate of instances of addressivity, 242. The main functions of addressivity in this context were task (103 instances) and logistics (88), followed by the technical (44) function.

The teacher used addressivity with a **task function** with the following aims:

- To encourage specific students to participate.

p4a5078:(0:07:49.2) T: OK, well now what I would like to do is a little bit of brainstorming, yeah? Can you brainstorm three words-- what words come to your mind, to your head when you look at the Beatles painting, at the Beatles picture.
[...]

p4a5087:(0:08:43.1) T: what else? colorful, original...
p4a9533:(0:08:56) T: what else, girls?
p4a9534:(0:09:01) T: ***Me, any ideas?***
p4a5088:(0:09:14.9) MeBa (LC): FUN...
p4a5089:(0:09:22.3) T: [laughs] fun, yes, with the rainbow, and the shapes.

This example shows the beginning of a class. The teacher is showing them a picture of the Beatles in preparation for the task they will have to perform in this module. The teacher asks them to brainstorm ideas that come to their mind when they see the picture. Several students offer answers, but Me does not participate. The teacher then uses addressivity to ask her directly for a contribution, to which MeBa answers through the text channel. The teacher acknowledges her answer by agreeing with her. Here, the teacher used addressivity as a strategy to invite quite students to participate.

- For input elicitation in follow-up questions.

In this example, the teacher asks the students how they feel when they see an art piece in a museum.

p0a7939:(0:10:06) T: OK here we have a couple of 3D objects, but since we don't have very much time, we're going to skip the computer one, but it's nice to see, and let's go in the next room. [3] what do you think about this one? [reads] I'm here in the tunnel. how do you feel when you see this one?
p0a7894:(0:10:59.3) MaBe (LC): its a game
p0a90:(0:11:02.3) T: it's a game? ***Pa****? what kind of game?*
p0a7895:(0:11:06.4) MaBe (LC): with
p0a92:(0:11:15.0) MaBe: game lights

MaBe offers an ambiguous response, and the teacher reacts by asking a directed follow-up question, asking her to clarify.

- To acknowledge a student's turn by agreeing or giving positive feedback such as praise.

p4a9538:(0:12:16) T: do you know why I'm showing you these two pictures?
p4a5132:(0:12:21.1) MeBa (LC): FOR THE MUSEUMS
p4a5133:(0:12:23.4) T: ***yeah [laughs] exactly, Me***

In this example, the class is discussing two pictures during the warm-up stage of the class. The teacher asks the class a question, to which the MeBa responds. The teacher confirms MeBa's contribution using her name.

6a6385:(0:05:37.7) T: I'll give you a clue maybe.
p6a6387:(0:05:39.6) T: if you don't know. They speak in English. And another language
p6a6388:(0:05:48.7) MeBa: in a city of Ireland?
p6a6389:(0:05:50.2) T: uh: it's not Ireland, but you're close, you're getting closer,
p6a6390:(0:05:56.0) NoLe: Edinburgh
p6a6391:(0:05:56.8) T: ***very good, Co****. It's Edinburgh, yeah?*
p6a9006:(0:06:01.1) T (LC): Edinburgh

In this example, the class is playing a guessing game. The teacher is giving them clues describing a city and the students have to guess what city it is. NoLe guesses and the teacher acknowledges her contribution by praising her and using her name after the praise.

- To ask for repetition.

p5a5563:(0:07:33.5) T: so it's very, it's a good destination for: [activates mic] it's a good destination for couples, for romantic uhm trips. What other reasons could there be for visitig Paris? Why is it so popular?
p5a5564:(0:07:50.8) JoDa: ??
p5a5565:(0:07:53.1) ***T: sorry, JoDa?***
p5a5566:(0:07:56.4) JoDa: ???
p5a5567:(0:07:57.5) T: uf! you have a: mm I can't hear you very well today, ***Jo****. Can the rest hear Jo correctly? I don't know if it's me or if it's the:..*
p5a5568:(0:08:08.1) MaBe: yes, I listen Jo. Eh, he says, la torre Eiffel
p5a5569:(0:08:11.8) T: ah! OK
p5a8545:(0:08:13.5) JoDa (LC): yes

Here, JoDa is having sound problems during a class discussion. The teacher asks the class a question and JoDa answers through the voice chat, but his voice is unintelligible to the teacher. The teacher then, asks him to repeat, using his name. JoDa repeats his answer through the voice chat, but again, the teacher cannot understand him. The teacher then makes a comment on the sound quality using JoDa's name and MaBe mediates and repeats JoDa's answer, to which JoDa confirms through the text chat.

Although in the fluency context the teacher's aim is to focus on fluency and maximize interaction, and thus, a high number of task-oriented turns were expected, there were also many addressivity turns used with a **logistics** function to manage interaction. The two main uses the teacher had for this function were:

- To encourage questions after a student-led tour.

In this example, the ArCh and LaAd have finished their tour around the Beatles museum.

(0:30:12.0) ArCh: there are also, there is also a fa: uhm a poster of the Beatles with the famous words of the song. All you need is love.
p4a5261:(0:30:27.8) T: mhm. Any questions, Me?
(0:30:31.1) T (LC): great
p4a5263:(0:30:38.0) MeBa: no

Me and Co are playing the role of the tourist, but Co is having technical problems. When the tour is finished, the teacher uses a directed question to ask Me if she has any questions about the tour.

- To signal it is a student's turn to hold the floor during a student-led tour.

Sometimes students showed reluctance to take the floor when it was their turn, and they needed prompting. In this example, Ar and La are about to start their museum tour.

p4t9658:(0:18:52) T takes a few steps towards the group
*p4a5183:(0:19:25.7) T: Ok, uh **Ar and La**? You are in charge of this museum, right?*
(0:19:31.0) NoLe-T (IM): adonde ay q ir?
(0:19:31.9) T: ups! wait, let me teleport Nora
p4a5186:(0:19:36.7) LaAd (LC): yes
(0:19:58.7) T: Nore, uhm Co, can you hear us?
(0:20:07.0) T (LC): NoLe can you hear us?
(0:20:08.4) T: try to log out and log in again
(0:20:13.7) T (LC): if not try to log out and log in again
*p4a5191:(0:20:15.9) T: OK, **Ar and La? Ar and La**, you are in charge of this museum, yeah?*
p4a5192:(0:20:24.7) LaAd (LC): yes

Here, the teacher used addressivity to prompt the students to start their turn. However, six seconds later, the teacher gets a message from NoLe, who is having technical problems and is still in the previous location. The teacher stalls the activity to teleport the missing student and to engage in a channel check with NoLe. As NoLe is not answering, the teacher gives her technical advice through both the voice and text channel in case she cannot hear. The teacher then, changes the addressee of her message again and repeats her directed invitation for Ar and La to start. In this example, the teacher used addressivity in most of her turns, as there were two different threads and the turns had different addressees. Not using addressivity might have caused confusion.

There were also instances of addressivity in this context with a **technical function**:

- Channel checks.

Most channel checks contained addressivity to avoid ambiguity regarding to whom the channel check was addressed. In the previous example, the teacher engages in a channel check with NoLe. She first uses the audio channel, and as she receives no response, the teacher switches to the text channel nine seconds later.

p4a5210:(0:22:29.2) T: who starts? [laughs]
p4a5211:(0:22:31.7) LaAd (LC): vaaa
p4a5212:(0:22:33.9) LaAd (LC): arii
p4a5213:(0:22:34.3) T: ***Ar?*** *You start?*
p4a5214:(0:22:38.5) ArCh (LC): ok
p4a5215:(0:22:56.4) T: ***Can you talk, Ari?***
p4a5216:(0:23:07.1) ArCh: hello?
p4a5217:(0:23:07.7) T: hello

In this example, the teacher is waiting for LaAd and ArCh to start with their tour. LaAd is prompting ArCh to start by calling her name and telling her to start. The teacher then asks ArCh is she is going to start and ArCh agrees through the text chat. As the tour is oral, the teacher engages in a channel check and asks her if her microphone is working. ArCh then uses a greeting through the voice channel to check her voice.

- To provide technical help.

In this example, students are visiting an art gallery and the students are choosing their favorite picture.

p0a25:(0:03:50.2) T: can you pai can you point at it?
p0a26:(0:03:55.9) ElMc: what?
p0a27:(0:03:56.4) T: can you point at it? if you click, if you put your mouse on the painting, and you click on it, you can point.[2] Can you point at it, ***Elsa****?*
p0a28:(0:04:13.6) ElMc: I can't!

ElMc mentions a painting and the teacher asks her to point at the painting, to clarify which painting she is referring to. ElMc engages in a repetition request because she does not understand what she is being asked to do. The teacher then repeats her requests and

gives her technical instructions as to how to point to a painting. She then repeats her request using ElMc's name to strengthen the request.

p6a6403:(0:07:24.5) T: yeah? OK uhm, can you go to the: did you try the sp eh: next the speak button, the arrow? have you tried to make her volume louder?
p6a9087:(0:07:38) T: Have you tried that, ***Me****?*
p6a6404:(0:07:41.5) MeBa: I try now
p6a6405:(0:07:42.8) T: ah OK. Tell me when you're ready, Me, and Co will start talking1
p6a6406:(0:07:50.6) MeBa: I'm... yes yes I'm ready

In this example, Me is having sound problems, she cannot hear her classmate Co. The teacher gives her instructions as to how to make an avatar's voice louder and then uses Me's name in the following question to check if she has understood the instructions.

c) Task-oriented context

This context had 64 instances of addressivity. Most addressivity turns in this context had a logistics function (26), which accounted for half of the instances in the task-based context. The logistics function was followed by task and technical functions in equal numbers (13 each) and the social function (10).

Addressivity with **a logistics function** was used to:

- Check on student progress.

p2a8300:(0:46:30) T: ***Keisha****, is everything OK? Do you have any other questions? if not I'll go to: to check on the Beatles*
p2a8299:(0:46:40.0) KH (LC): no, thanks
p2a2704:(0:46:40.3) T: ah OK. Perfect.

In this example, the students are working in groups to prepare their tour. The teacher walks towards Keisha and asks her a directed question to check if she needs help.

- Repeat, simplify or adapt instructions.

During group work, sometimes the teacher needed to remind students of the task instructions, or help them with some problem.

p2a2656 (0:38:39.8) T: have you found anything interesting?
p2a8276 (0:38:48.0) ToSp: yes
p2a2660 (0:38:52.1) T: OK can you show me a little bit?
p2a2671 (0:40:48.1) T: let's see:
*p2a2672 (0:40:54.1) T: yes OK thank you **To!** but uhm what you have to decide, ups! [activates mic] Thank you **To** but what you have to decide a little bit is what you are going to say uh: in each place. For example at the beginning, before entering the museum, you can give a little introduction of what it's about. And then, you can take us to different places. you know? like the the bathroom, and:*
p2a2673 (0:41:17.0) ToSp: ah OK OK

In this example, the teacher is checking in on the student progress and ToSp sends her the notecard of what they have prepared so far. After reading it, the teacher, using To's name, gives him guidelines as to what they are expected to do.

Other times, the teacher repeated the instructions after appeals for help or clarification requests. After the teacher clarified the instructions for To, RuHa, also in the same group, made an appeal for help:

p2a2676:(0:42:06.3) RuHa: Cristina
p2a2677:(0:42:07.4) T: yes
p2a2678:(0:42:09.8) RuHa: I don't understand what we do
*p2a2679:(0:42:15.9) T: OK. Can you hear me **Ru***
p2a2680:(0:42:19.4) RuHa: yes
*p2a2681:(0:42:21.0) T: what a you're going to do next week is you are going to show this museum to the other group you are going to give a little guided tour of this mueseum yeah? like imagine like if you worked in this museum. so what I want you to do is prepare a little bit what you would say you know? if you had to show uh a group of tourists this museum, or a group of students, what would you say? [3] yeah? is that clear **RuHa**?*

After RuHa's appeal for help, the teacher first makes a channel check as she has just given the group some help for the group task. RuHa confirms that she can hear, so the teacher repeats her instructions and ends with a comprehension check followed by her name.

Other times the tasks had to be adapted due to technical problems or other logistical issues. In this example, students have to get into pairs and choose a museum to prepare a guided tour on. However, that day only three students turned up in one group. Furthermore,

one of the students did not initially agree on the same museum the other two students wanted to do. The teacher then suggests and alternative plan for NoLe:

*p3a2961:(0:15:19.7) T: Ok ups! [loud noise] OK **Nora Co** you have two options then uhm if you if you like this one, you could prepare it individiually or if not maybe we'll go to the Beatles, it's a little bit easier. 'cause here there's a lot of uh a lot of different stuff.*
*p3a9528:(0:15:48) T: So **Co,** wha what do you want to do?*
p3a2964:(0:15:50.5) NoLe: ah: mm the the Space is.. is beautiful
*p3a2965:(0:15:59.8) T: yes... OK should we try the space **girls**? do you want to try the space museum?*
p3a2966:(0:16:04.1) NoLe: or or classical art, I like

In this example, the teacher adapts the task instructions to the situation and gives NoLe two possibilities for doing the task. She uses both her character and her real life name to give her the instructions. Thirty seconds later, she asks NoLe again, using her real life name, what she has decided to do. NoLe suggests a third museum as a compromise and the teacher uses generic addressivity to ask the rest of the group if they agree.

- Gather students when they are doing group work or exploration.

p2a2559:(0:25:25.9) MaBe: where are you?
p2a2560:(0:25:29.3) T: they're sitting down they're having problems with the roof. ups! they're having problems with the roof let's see
*p2a8220:(0:25:34) T: **Elsa! Ru!** Can you can you: come up?*

In this example, a group is exploring the Beatles museum, but the group gets lost in the different stories in the house. The teacher and MaBe are waiting for the rest of the group on the roof. The teacher calls the rest of the group by their names and asks them to come up.

Regarding addressivity with a **technical function**, it was found during:

- Channel checks during group work.

Sometimes there was a communication breakdown during group work.

p3a3129:(0:39:21.2) T: OK. Are you ready to go upstairs?
p3a3130:(0:39:25.6) LaAd: que?
p3a3131:(0:39:27.2) T: are you ready to go upstairs?
*p3a3134:(0:39:35.2) T: **La, can you hear me?** Are you ready to go upstairs?*

p3a3135:(0:39:38.4) LaAd (LC): no t'entenc
p3a3136:(0:39:40.6) LaAd (LC): yes yes

In this example, the teacher is asking the group if they have finished exploring the downstairs and want to go upstairs. La, using her L1, asks the teacher for repetition. The teacher repeats and after eight seconds, she starts a directed channel check to make sure that the problem is not technical. La then, using the text channel, indicates non-comprehension, but then seems to understand the teacher's question and confirms her understanding.

- Teleport offers.

During or at the end group work, the teacher would offer a teleport for the students to join the group or would ask for a teleport so that the group could teleport the teacher to their location.

p2a2730:(0:49:24.4) T: ***Vi, do you need a teleport?***
p2a2731:(0:49:28.5) ElMc: no eh no, thank you you but I'm in the other side of the: =wall=
p2a2732:(0:49:33.9) T: =of the wall= [laughs]

In this example, ElMc is separated from her group. The teacher, who is with the rest of the group, asks ElMc if she needs a teleport, but she declines the offer stating that she is very close.

- In-world instructions.

Students sometimes asked how to perform an action in *Second Life*. In this example, the students have to write a note for the teacher. KeHu asks the teacher how to send the note, and the teacher using her character name, gives her the instructions.

p2a8298:(0:45:19.6) KeHu (LC): how can i send my note?

p2a2702:(0:45:27.8) T: ***Keisha,*** *when you're finished with your note/ just put guardar, and then when we go to CETT island, you will drag and drop it on my avatar and then I will receive it okey? just first just uhm write your note and save it.*

d) Social context

There were 28 instances of addressivity in social contexts. It was mainly used in greetings at the beginning of the class.

p3a2876:(0:00:34.5) T: Hello: Me and: Co,
p3a2877:(0:00:40.4) MeBa: hello

The teacher tended to greet the students at the beginning of each class personally following the structure: greeting + name. However, there was just one instance of addressivity for leave takings and that occurred because a student had stayed behind to discuss something with the teacher, so she was the only student left online. Leave takings took on a *zero addressivity* structure.

The strategy of greeting students individually by their name, had a double function: it was part of the social opening of the class, but it also served as a technical check, to see if the participant responded to the greeting to check for presence and technical problems. This function will be discussed in the 'channel check' strategy in section 6.1.5. of this chapter.

6.1.1.3. Addressivity in two class activities.

a) Discussion activity

Table 17 shows the instances of teacher addressivity found in both groups during a discussion activity that took place during the warm-up discussion activity in module 3.

Table 17.
Teacher addressivity in discussion activity

Addressivity	Total T occurrences	Occurrences in voice turns	Occurrences in text turns	% total T turns in task
Discussion activity	35	33	3	21.4%

In this activity there were no instances of student addressivity found. On the other hand, as can be seen in Table 17, there were frequent instances of teacher addressivity as it was

found in 21.4% of the teacher's turns in the discussion task. Out of the 35 addressivity instances found in the task, 28 had a task function, and 7 had a technical function.

The teacher used addressivity with a task function to:

- Acknowledge a turn or give positive feedback.

> *p5a5516:(0:02:33.5) T: OK, I think we're going to start, uhm these are the last, uhm this is the last module of Second Life that we're going to do this year, uhm today we're going to have the first session and then we'll have two more sessions. And this is called virtual tourism, we're going to do a little bit of virtual tourism. So, if you take a look at this picture, do you know uhm what city this picture was taken in? Do you know what's the name of this cathedral?*
> *p5a5517:(0:03:05.5) JoDa: Notredamme*
> *p3a5518:(0:03:06.9) T: exactly,* ***Jo****.*

Here the teacher asks the class a question about a picture they can see and JoDa answers. The teacher acknowledges his answer by using his name.

- Ask directed questions and allocate turns for participation.

> p5a5521:(0:03:25.6) MaBe: ??
> p5a5522:(0:03:29.2) T: sorry, can you can you type in chat? because I can't hear you very well. Jo has been to Paris, and who else?
> p5a5523:(0:03:36.8) MaBe: I, Pa
> *p3a5524:(0:03:37.5) T: ah oK, Pa,* ***and Ma and Ru****? Have you been to Paris?*
> p5a5525:(0:03:43.3) RuDo: no

In this example, the teacher asks the class who has been to Paris, but only Jo and MaBe respond. The teacher then uses the other students' names and uses a directed question to know if they have been to Paris.

- Ask for repetition.

> *p5a5563:(0:07:33.5) T: so it's very, it's a good destination for: [activates mic] it's a good destination for couples, for romantic uhm trips. What other reasons could there be for visitig Paris? Why is it so popular?*
> *p5a5564:(0:07:50.8) JoDa: ??*
> *p3a5565:(0:07:53.1) T: sorry,* ***Jo****?*

In this example, the teacher uses a directed repetition request triggered by JoDa's unclear utterance due to microphone problems.

Addressivity for technical puposes was used in channel checks to clarify who the intended recipient of the sound check was:

*p3a8528 (0:03:59) T: Can you hear me, **M**a?*
*p3a8529 (0:04:01) T (LC): **ma**, can you hear me?*

Overall, the main use of addressivity during the discussion activity was for task purposes followed by technical sound purposes. The teacher used a much lower rate of addressivity strategies with the second group. This was due to the fact that there were no technical problems during the discussion activity and, thus, there were no uses of addressivity with a technical function.

b) Guided tour

Table 18 illustrates the instances of addressivity found in the guided tour activity. There were instances of addressivity found for both the teacher and the students, but, as can be seen in the table, the teacher used addressivity more often than the students. Although there was a significant rate of addressivity occurrences, the rate in the guided tour was lower than in the discussion activity.

Table 18.
Teacher addressivity during guided tour activity

Addressivity	Total T occurrences	Occurrences in voice turns	Occurrences in text turns	% total T turns in task
T addressivity	55	48	6	14.3%
St addressivity	26	19	7	8%

The main function for addressivity in this activity was logistics (29 instances), unlike the discussion activity where this function was inexistent. There were also technical (16 instances) and task (10 instances) functions found.

The teacher used addressivity with a logistics function to:

- Prompt students to start their task.

p4a7440:(0:36:14.8) T: OK uh who starts? La or Ar?

p4a9300:(0:37:25.9) T (LC): ***ar****, ready?*

Here, the teacher uses addressivity as a prompter for Ar to start her turn.

- To call someone's attention.

p11a6836:(0:35:09.7) T: where's Ne? wait. [3] ***Ne****!*
p6a6837:(0:35:24.4) NoLe: ya hemos perdido a alguien del grupo. Esto no puede ser!
p6a6838:(0:35:25.6) T: [laughs] Where's Ne? Wait, let me teleport her

In this example, the group has just teleported to new location and the teacher realizes that one of the students, Ne, is missing. She calls out for Ne in case she is nearby, but, as she does not answer, the teacher decides to send her a teleport offer.

Addressivity with a task function was used for the following purposes:

- Elicit input through follow up questions.

p11a7086:(0:57:09.5) T: they are very nice houses. Can you tell us something else about the houses, ***Me****?*

Here, the teacher asks a question after Me has given her tour of Lombard street and uses her name to clarify that she is the intended addressee.

- Ask for repetition.

p7a7504:(0:50:03.6) ArCh: ????
p4a7505:(0:50:05.9) T: sorry Ar? I didn't hear the last part.

Addressivity for technical purposes was mainly used in channel checks:

p11a9169:(0:53:04.0) T (LC): can you hear us ***ne****?*

As in the discussion activity, channel checks were also found in this activity and they usually included the addressee.

Thus, the teacher used addressivity during the guided tour for a wider range of purposes than during the discussion activity, such as prompting students to start the task or to call for someone's attention. However, there were also shared purposes such as directed questions for participation, channel checks or repetition requests.

There were also student ocurrences of addressivity found in the data, although the addressivity rate regarding the teacher's was lower. Students used this strategy to:

- Organize speaking turns.

> p4a9242:(0:23:46.6) JoDa (LC): ok now it's the **to**'s time
> p7a7343:(0:23:48.6) T: OK. To you you can use your voice, huh?
> p7a7344:(0:23:52.9) ToSp: [laughs] si. Eh: we have to go to the Golden Gate.

In this example, To and Jo are delivering a guided tour and when Jo finishes his part, he calls on To to take over.

- Make requests.

> *p7a7384:(0:29:17.3) JoDa: a Spanish mission, but ?? Golden Gate*
> *p4a9259:(0:29:19.0) ArCh (LC): **jo** talk with chaat opkeasee*

Here Jo is having technical problems during his tour and a classmate, using his name asks him to switch to the written channel so that she can understand him.

- Call someone's attention or for group decision-making.

> *p6a6894:(0:40:17.6) NoLe: eh: mmm **Me, Ne**, go to the other place or no?*
> *p6a9328:(0:40:48) T: Me, Ne, where should we go now?*
> *p6a9331:(0:40:59) T: OK, Me, Ne, where's the next place?*
> *p6a9135:(0:41:06.3) KH (LC): golden gate*
> *p6a6907:(0:41:08.8) T: OK, see you there then.*
> *p11a9139:(0:41:40.0) KH (LC**): cristinaaaaaaaaaa***
> p6v9256:(0:41:44) T teleports to Golden Gate

In this example, this group is delivering a tour of San Francisco. They have finished one location and NoLe tells her group, using their names, that they should go to another location. They agree that their next location is the Golden Gate and then KeHa calls the teacher through the text chat lengthening the last vowel in her name for emphasis and to attract the teacher's attention, but it is too late because the teacher has teleported to the Golden Gate.

To sum up, students used addressivity to decide who was going to speak during their guided task, to ask directed questions for group decision making, and it was also used to call someone's attention. The fact that the participants were doing a walking tour made it necessary sometimes to use addressivity, especially when avatars were not very close together.

6.1.2. Feedback Markers or Backchannels.

Feedback markers were the most frequent transactional strategy found. There were 613 instances found, which represented 22.4% of the total teacher turns. This strategy was mostly oral, as almost 94% of the feedback markers used by the teacher were produced through the audible channel.

Four different types of feedback markers were identified in the data:

- Acknowledgement: expressing agreement or understanding of a student's turn.
- Continuers: interlocutor signals the right to continue.
- Assessment: expressing interest, surprise or appreciation of what has been said.
- Non-verbal vocalizations: responding by means of vocalizations such as laughter.

The most popular type of feedback marker was acknowledgement (405 instances) and was followed at a much lower rate by continuers (114), assessment markers (61) and non-verbal vocalizations (33).

Most feedback markers found in the teacher's discourse had a task function (360) followed at a distance by the logistics (118), technical (95), and social (40) function. Furthermore, the task function had the most varied types of feedback markers. Acknowledgement was the most used feedback marker in all functions.

6.1.2.1. Feedback markers and classroom context.

The majority of feedback makers were found in the fluency (459) and procedural (116) classroom contexts.

a) Fluency context

Most feedback markers were found in this context and the major function feedback markers had in the fluency context was task-oriented, which accounted for 350 of the 459 feedback makers found in this context.

Acknowledgement was the most frequent feedback marker used with a task function. The most frequently used feedback makers were *aha, mhm*, *OK,* which the teacher used to show presence and understanding in an unobtrusive way. Acknowledgement markers were also used to show agreement (*exactly)* or praise (*good* or *perfect)*.

> *p3a5557:(0:07:01.9) T: Let's see, this question is for everybody. What makes Paris uhm so famous? You know? It's one of the top cities to visit. It has a lot of tourists every year. Why do you think everybody wants to visit Paris?*
> *p3a8542:(0:07:24.5) T (LC): what makes Paris a popular destination?*
> *p3a5559:(0:07:24.8) MaBe: it's the city of eh: the love.*
> *p3a5561:(0:07:28.9) T:* ***exactly****, very good.* ***Aha****, it's the city of love,*

In this example, the teacher asks the class a question about Paris and MaBe provides an answer. The teacher acknowledges Ma's answer by using a string of acknowledgement markers *exactly*, *aha,* an expression of praise and repeating the student's utterance with a correction.

Continuers were also used often in this classroom context. As acknowledgmenet markers, continuers were used to marks presence, understanding of a student's utterance and encouragement to follow, but they were more unobtrusive than acknowledgement markers. The most frequent continuer was *mhm*.

> *p3a5872:(0:51:43.0) MaBe: Paris is the: capital of France,*
> *p3a5873:(0:51:47.8) T:* ***mhm***

p3a5874:(0:51:48.3) MaBe: eh: the river Sena cross the city and Paris is situated in the north of France. In the city center you can see to islands. The island of St Louis and the island of la Cité. Is the city about love. A lot of couples go to Paris to ??? with a lot of love.138
p3a5875:(0:52:09.5) T: ***mhm, very nice****.*
p3a5876:(0:52:12.0) RuDo: OK, now eh: we are talking about eh: the Eiffel Tower. Is an iron tower situated in Paris, eh built in 1889, and it was become a icon of France and one of the most important building in the world.
p3a5877:(0:52:30.9) T: ***mhm***

In the example above, a group of students are preparing for a guided tour in Paris and are reporting their findings to the rest of the group. The teacher uses a continuer after each student turn to signal presence and encouragement to continue. The teacher also uses an assessment maker after the continuer in turn 4 to signal interest.

p4a7499:(0:49:42.6) ArCh: and: the entrance cost 105 euros. [2] Very expensive.
p4a9348:(0:49:51.2) T (LC): 105
p4a7501:(0:49:51.6) T: 105? that's very little,
p4a7502:(0:49:55.4) ArCh: yes. The: dinner and and spectacle
p4a7503:(0:49:59.6) T: ***ah OK OK****! The ticket!* ***OK! wow****!*

In this example, ArCh is giving a tour around the Moulin Rouge she is giving information about the shows. However, the teacher uses a confirmation check to make sure that she understood the information correctly. The teacher uses the acknowledgement feedback marker *OK* to signal that she understood and *wow* as an assessment marker to express a special interest in the content of the message.

In the next example ToSp is talking about the Golden Gate and its architectural features. The teacher uses the same assessment marker as before to provide content feedback:

p4a7369:(0:28:02.5) ToSp: ah pues and it's 1977 meters long
p4a7370:(0:28:12.5) T: ***wow***
p4a9257:(0:28:14.2) T (LC): ***wow***

In this example the teacher shows interest in the content of what ToSp is saying by repeating the same assessment feedback marker through two different channels. By repeating

her feedback marker through the written channel, the teacher wants to make sure that the student had received the message.

At a lesser rate than the other types of feedback markers, the teacher also used laughing as a way of showing presence.

p11a9204:(0:59:52.5) T (LC): what part of SF di you like best?
p11a9205:(1:00:08.9) KH (LC): for the party the market castro
p11a7115:(1:00:11.6) T: ***[laughs]*** *yes*

After a guided tour around the virtual city of San Francisco, the teacher asks the class what part of San Francisco they liked best. KeHu replies that she liked Market and Castro district because of the party music playing, to which the teacher laughs.

Most feedback markers with a **logistics function** were acknowledgement markers, used to signal that the students could start their turn during a presentation, for example.

p4a7356:(0:26:49.4) T: ah OK. ***OK!*** *We're ready.*
p4a7357:(0:26:54.6) ToSp: eh well, this is the Golden Gate bridge, and is a suspension bridge, and is opening the San Francisco Bay into the Pacific Ocean,
p4a7358:(0:27:06.8) T: mhm

Feedback markers with a logistics function were also used to signal understanding of a message or to signal agreement regarding the logistics of an activity. This especially happened during transitions or during guided tours

p4a9272:(0:31:16) T: Where should we go in Paris?
p4a9266:(0:31:27.1) ArCh (LC): eiffel towrr
p4a7409:(0:31:29.0) T: ***oK.***
p4a7410:(0:31:30.8) T: that's the first one.

In this example, the students are going to start their guided city tour and the teacher is asking the students where they should go. The teacher uses a feedback marker to acknowledge message reception and agreement.

The teacher sometimes provided technical help during activities when there were sound problems or to any in-world issues.

p6a9170:(0:53:07.8) KH (LC): if I turn off the voice i can't hear you?
p6a7048:(0:53:12.6) T: really?
p6a9171:(0:53:20.6) KH (LC): or I can?
p6a9172:(0:53:31.4) T (LC): you only have to turn off the player
p6a9173:(0:53:37.9) T (LC): on the right hand corner
p6a9174:(0:53:39.1) T (LC): of the window
p6a9177:(0:53:48.2) MeBa (LC): you have to press the pause not the volum no?
p6a9175:(0:53:48.6) KH (LC): cristina can you talk
p6a7057:(0:53:50.4) T: exactly, Me, aha, just pause, yeah.
p6a9319:(0:53:53) T: Yes, I'm talking.
p6a9180:(0:54:00.4) KH (LC): a vale ya esta
p6a7063:(0:54:02.0) T: ah, ***OK. Perfect****. OK, Me, we're ready.*

In this example, KeHu cannot hear the participants because of in-world music playing. The teacher and MeBa tell KeHu how to turn off the music and KeHu indicates that she has managed to turn it off in her L1. The teacher acnowledges that KeHu has solved her problem and then prompts Me to start her turn.

b) Procedural context

The only feedback marker type found in this context was acknowledgement. The most prevalent function in this stage was technical and logistical, with 63 and 52 occurrences respectively.

As with the previous context, feedback markers with a technical function were mostly acknowledgement markers and were comprised of sound checks to indicate that the teacher could hear the student or to confirm that she had received a note from a student. The most frequent makers were *perfect, yes* and *ok*.

p2a2439:(0:14:13.6) T: OK. So uhm: this museum has special effe...
p2a8718:(0:14:18) T: can you hear me? Everybody?
p2a2440:(0:14:22.3) JoDa: yes
p2a2441:(0:14:22.9) T: yeah? ***Perfect***
p2a8251:(0:14:23) ToSp: yes
p2a2442:(0:14:23.5) KeHu: yes

In the example above, the class has just moved to a new location and the teacher starts to describe the new location to the students. She suddenly stops her description and remembers to initiate a channel check, which is part of her routine when there is a location change. JoDa confirms that he can hear the teacher and she acknowledges his confirmation with a feedback marker.

p4a5356:(0:42:47.9) LaAd (LC): i dont know where is it
p4a5357:(0:42:52.7) T: you don't know where it is, wait, let me:- go to items recientes.
p4a9810:(0:42:57) T: =go to items recientes=
p4a5360:(0:42:58.0) T (LC):= items recientes=
p4a5362:(0:43:01.2) T: La, and uhm
p4a5364:(0:43:06.3) T: and then in items recientes, and in items recientes you should have a folder called 'objetos'. And inside objetos there's a hallucinations badge.
p4a5366:(0:43:22.9) LaAd (LC): yess
p4t9812:(0:43:23) LaAd is wearing the badge
p4a5367:(0:43:23.6) T: ***OK****, La has it.* ***Perfect***

Here, the teacher is helping LaAd to put on a badge on her avatar. After the instructions, the teacher sees that LaAd is wearing the badge on her shirt and acknowledges that LaAd has it through two feedback markers.

Feedback markers with a logistics function in this context were used mainly to form or acknowledge groups:

p7a2388:(0:07:02.2) T: is somebody intersted in the beatles? we need maybe ah: we could have four people for skezophrenia and three people for the beatles.
p7a8110:(0:07:17) T: the Beatles is easier. than than skezophrenia [laughs]
p7a8109:(0:07:27.0) MaBe (LC): the beatles
p7a2390:(0:07:29.0) T: ***OK*** *Maia Beatles,*

Here the teacher asks for student preference when forming groups for the museum tours. MaBe indicates she wants to be in the Beatles team and the teacher replies with the feedback marker *OK* and repeats the student's name and museum.

6.1.2.2. Feedback markers in two class activities.

There were student and teacher feedback markers found in the discussion task. However, teacher feedback markers were more frequent than student feedback markers as students only used feedback markers on eight occasions.

All teacher feedback markers took place through the audible channel. There were 48 teacher feedback markers found between both groups. Most of them were acknowledement markers (39) followed by assessment (8) and there was only one continuer found. 43 out of the 48 feedback markers were task-based. Addressivity was only found in acknowledgement markers, 10 out of the 39 included the name of the addressee.

Most feedback makers in this task were acknowledgments, thus, the aim was to show presence and understanding of the interlocutor's utterance.

> *p5a8548:(0:9:34) T: and uh Ru, can you hear me? I haven't heard you very much.*
> *p5a8881:(0:9:39) RuDo: =Yes, yes=*
> *p5a8353:(0:09:40.0) T (LC): =ruth, can you hear me?=*
> *p5a5584:(0:09:40.7) T: ah,* ***OK****, perfect. You haven't been to San Francisco, have you?*
> *p5a5585:(0:09:46.0) RuDo: no, I never.*
> *p5a8549:(0:9:46) T****: OK****.*

In this example, the teacher starts a channel check with Ru because she has been very silent during the discussion. As she does not answer, she repeats the channel check through the text channel at the same time that RuDo is confirming the channel check. The teacher uses a feedback marker to signal understanding and repeats the question that she has asked the rest of the class. RuDo answers and the teacher acknowledges her answer with a feedback marker.

There were also some assessment markers, which had the aim of creating a comfortable learning environment and encouraging the students to participate.

> *p11a8870:(0:17:39) T: But anyway, there's a: good. What other things are interesting to see in San Francisco? Maybe you haven't been there but you've seen a lot of movies, so maybe you can think of something you have seen in a movie about San Francisco.*

p11a8872:(0:18:24.0) LaAd (LC): els carrers amb molta pendent son molt tipics de les pelicules
*p11a6068:(0:18:28.7) T**: oh yes, yes, they're scary huh?** these uhm steep steep hills that go up and down up and down, yeah.*

In this example, the teacher is asking them to name landmarks they know about San Francisco. La, in her L1 mentions the steep streets. The teacher acknowledges her answer using an assessment marker to comment on how scary they look. Using assessment markers contributed to creating a conversational environment during the discussion.

Feedback markers were a very important strategy during the guided tour, there was a very high density of feedback makers both from the students and the teacher comparing them to the discussion task. Regarding the teacher feedback makers, there were 147 found. However, acknowledgement markers were not the main feedback markers used, as in the discussion task. Continuers were the most prominent strategy (83), followed closely by acknowledgement markers (72). There were also laughs (13) and assessment markers (9), which where absent during the discussion activity.

The teacher used continuers after a student's utterance to signal their right to continue with the tour.

p6a6887:(0:39:51.7) T: yeah, uhm, this ferry, that we have right in front of us, the ferry, does it take us to the island, to the other part of the island? to Alcatraz? Have you have you taken the ferry?
p6a6888:(0:40:03.9) NoLe: well I...
*p6a6889:(0:40:04.4) **T: mhm***
p6a6890:(0:40:05.6) NoLe: =I I try=
p6a9133:(0:40:06) MeBa: =no: you can see but...=
p6a6891:(0:40:10.0) NoLe: I try but don't move it.
*p6a6892:(0:40:12.4) T: it doesn't work, **OK**.*

In this example, the group is doing the San Francisco tour and the teacher asks them if they have taken the ferry to Alcatraz. NoLe starts answering and the teacher uses a continuer to encourage her to answer. MeBa tries to help her but NoLe finishes her message. The

teacher then recasts NoLe's utterance and uses a feedback marker to acknowledge her answer.

The aim of the acknowledgment markers was to provide a signal of presence and understanding.

> *p8a7609:(0:10:54.0) RuDo: ?? come if you want you stay here five minutes and later eh: we go to: Champs Elysees*
> *p8a7610:(0:11:12.6) T: **OK**, perfect.*

In this example, RuDo is giving a tour of Paris and makes a suggestion. The teacher expresses her understanding with the feedback marker *OK*.

There was also a presence of non-verbal vocalizations, which were not present during the discussion task. Assessments and non-verbal vocalizations contributed to create a light-hearted atmosphere and to show interest.

> *p8a7705:(0:25:19.2) T: Do you know how much it costs? to to see a show? in the Moulin Rouge?*
> *p8a7708:(0:25:40.4) MaBe: fifty euros? more or less?*
> *p8a7709:(0:25:41.8) T: yeah, probably. I think, usually, sometimes they have I think packages of dinner and show. Mhm.*
> *p8a7710:(0:25:52.3) MaBe: ah, maybe it's mm more expensive, no?*
> *p8a7711:(0:25:55.4) T: yes, if the dinner is is included, I think somebody said, some group of students maybe it was 100 euros, for the dinner and the show or something. Mhm.*
> *p8a7712:(0:26:06.2) MaBe: Ru! Molt car, eh? Per nosaltres?*
> *p8a7713:(0:26:09.1) **[T laughs]***
> *p8a7714:(0:26:10.6) RuDo: no no un dia un dia es un dia!*

In this example, MaBe is talking about the Moulin Rouge. The teacher asks them how much a ticket to the show costs and after talking about prices MaBe, jokingly, tells Ru in their L1 that it is too expensive for them. The teacher laughs signaling that she has understood her joke and RuDo continues with the joke and replies that a day is a day.

Students used feedback markers to acknowledge the teacher's comments as well as non-verbal vocalizations, which contributed to a feeling of community.

Only five feedback makers were made through the text channel, which show that although one of the aims is to show presence in an unobtrusive way, feedback makers were used basically through the audible channel.

6.1.3. Timesaving Devices.

Timesaving devices hardly appeared in the data. The findings were anecdotic as there were only eleven instances found throughout the data, four times by the teacher and seven by students.

6.1.3.1. Teacher timesaving devices.

The teacher only made use of timesaving devices on four occasions, she used two abbreviations and two acronyms.

a) Abbreviations.

p3a8666:(0:37:10.6) T-RuDo (IM): can you tp me?
p9a5411:(0:50:50.9) T (LC): can you see the pic girls?

The first example contains a common abbreviation used in *Second Life* to refer to the teleport function, which is a frequently used command in this virtual world. The second abbreviation, pic for picture, has a widespread use in online and face-to-face environments.

b) Acronyms .

p9a5473:(0:59:00.3) T (LC): coudl you compare real life museums to SL museums?
p11a9204:(0:59:52.5) T (LC): what part of SF di you like best?

As before, *SL* refers to the virtual world of *Second Life* and is only shared by users of this virtual world. The second abbreviation refers to San Francisco.

6.1.3.2. Student timesaving devices.

Students used timesaving devices for a wider range of reasons than the teacher. Many of the timesaving devices used by students were in their L1.

a) Non-standard spelling in the L1

p6a3372:(1:10:19.8) ArCh (LC): u busco

Here a student uses non-standard spelling as a time saving device, but she is typing in her L1.

b) Acronyms

p8a3954:(0:59:13.8) KeHu (LC): in SL
p8a4009:(1:03:06.1) KeHu (LC): NY
p9a5489:(1:00:28.6) NoLe (LC): in SL

Two students use the SL acronym and there is one more acronym for the city of New York.

c) Abbreviations

p10a8844:(0:14:06.9) LaAd (LC): s. fcsco

d) Symbols

p10a8866:(0:17:10.5) LaAd (LC): q van x la ciutat

Here a student uses a symbol as a substitute for a preposition as a timesaving device, but again, she uses it in her L1 and this strategy is only found once.

4.1.3.3. Time-saving devices in two class activities.

There were no instances found in either of the tasks.

6.1.4. Technical Help.

There were 307 instances of technical help found in the data. This strategy was important in the MUVE classes, as it accounted for 11.2% of the totality of the teacher's turns.

It was observed in the data, that the teacher's technical help served three functions: to provide instructions as to how to use the online environment (91 instances), it was also used as a reaction triggered by students' clarification, repetition requests or appeals for help (147

instances), and finally it was also used to help students fix their microphone or sound problems (72 instances). The most frequent use of tech help was triggered by students' appeal for help.

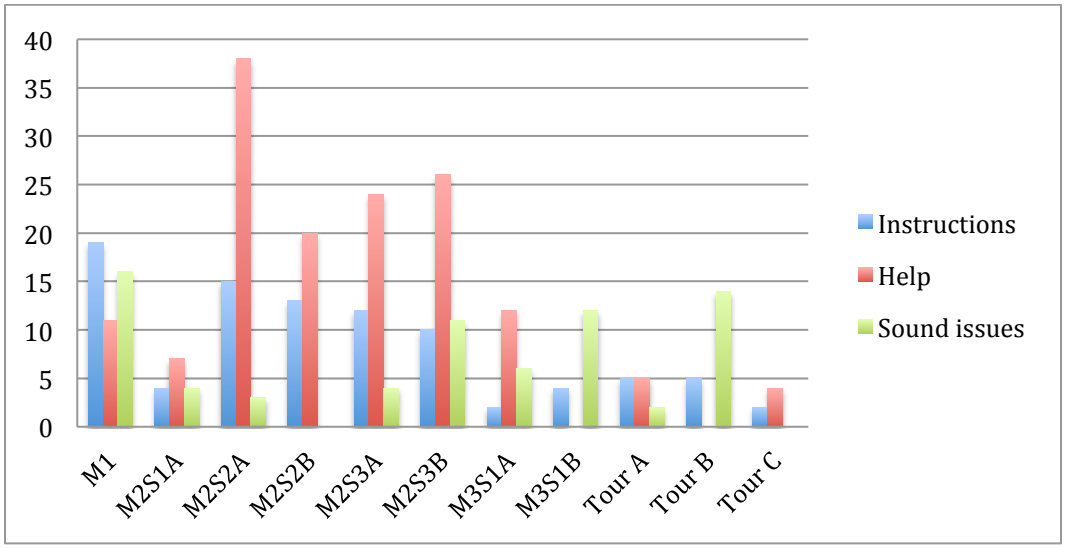


Figure 18. Types of technical help throughout the sessions

In figure 18 we can see the total instances of tech help per session. We can observe that there is a tendency for instances of tech help decrease throughout the sessions. Thus, familiarization with the online environment is an important factor for the need of this strategy. Also, the first half of the course had technical help triggered by students' appeal for help as the main type of technical help, but towards the end of the course, sound issues were the main trigger for technical help.

Module 3 is the module that has the least tech help occurrences. This is probably due to the fact that it is the last module, so students are more experienced in *Second Life* and thus need less help. Nevertheless, some students still have sound problems in this module, so student technical problems have proven to be unpredictable in their occurrence and present in almost all the session, regardless of the number of SL sessions students have had. The lesson that triggered most instances of tech help was when students were asked to perform a new technical task.

6.1.4.1. Tech help and classroom context.

The main classroom context for tech help was the procedural context, which accounted for 251 out of the 307 instances found.

Most instances in this context were related to instructions. In figure 18 we can see that there were frequent occurrences of instructions during the first half of the course, but, as participants get familiarized with the environment and navigational skills needed, the number of technical instructions decreased. Instructions were related to skills they needed to perform a task in *Second Life* such as creating a notecard, sitting down, teleporting to a location or animating one's avatar.

> *p2a2415:(0:10:31.5)* ***T: So what you have to do is double click on the: blue link, and it will take you to: to the museum****. I'm going to start with Jo ah: well Jo's group the schizophrenia because it's a little complicated and I have to help you a little bit with what you have to do here and then I'll go visit uhm Maia, Elsa and Ruth. Try to speak in English. ups [activates mic] my mircophone again sorry. uhm I'm going to start with Jo's group because it's a little bit more complicated,*
> *p2t8373:(0:12:32) RuDo stands up*
> *p2a2436:(0:12:52.9)* ***T: OK so uhm double click on the link of your museum, yeah? beatles beatles schizophrenia schizophrenia,***
> *p2a2438:(0:13:04.8) T: and uhm I'll meet you there in a while, yeah? I'll start with uh: the schizophrenia museum.*
> *p2a8715:(0:13:12) T: OK Joi? To?*
> *p2t8374:(0:13:12) KeHu stands up*
> *p2t8375:(0:13:16) MaBe teleports*
> *p2a8716:(0:13:20) T: T: Let's go,*
> *p2t8376:(0:13:22) RuDo teleports*
> *p2t8377:(0:13:22) ToSp stands up*
> *p2t8382:(0:13:48) RuHa and JoDa teleport*

In this example, the group is sitting around a carpet. The class is split into two groups and they are going to each go to a museum to explore in preparation for a guided tour. After giving them the task instructions, the teacher gives them technical instructions to tell them how to teleport to the museum. She then tells them which group she is going to start with. Two minutes later only RuDo stands up so the teacher rephrases her technical instructions and how she is going to monitor the group work. Again, the students do not respond. Eight

seconds later, the teacher checks if the first group is ready by naming its members and the students start teleporting to their locations. In this example, the students do not show any verbal signs of understanding, however, the visual mode acted as a means to show understanding. The teacher stayed on the island until every student had teleported, to check that they had all understood the instruction and were able to teleport.

Other instances were triggered by students' appeal for help when they were experiencing some difficulty to navigate the *Second Life* environment. The triggers for teacher technical help are mainly appeals for help, clarification requests and repetition requests.

The graph shows that session M2S2A had a very high number of technical help triggered by students' appeal for help. In this session, students needed to put on a badge that animated their avatar for the Virtual Hallucinations Museum. This skill involved interacting with an object in *Second Life*, saving the object in the student's inventory and then activating the object from the inventory to animate the student's avatar. This procedure proved too challenging for most students, who had only had a few hours of exposure to *Second Life*.

p2a8185:(0:18:51.8) T (LC): open your inventory
p2a2486:(0:18:52.1) T: OK. Do you see something that says halluci: hallucinations badge?
p2a8186:(0:18:56.2) JoDa (LC): i have it in my inventory but nothing else
p2a8187:(0:19:02.0) T (LC): 'hallucinationsbadge'
p2a2490:(0:19:02.3) T: you have it in your inventory? Jo?
p2a8188:(0:19:04.5) ToSp (LC): me too
p2a2492:(0:19:05.3) T: then you have to double click.
p2a8191:(0:19:09) T: or, [2] right click, and wear. when you double click on it, it eh:
p2a8189:(0:19:12.7) ToSp (LC): me too and then?
p2a8190:(0:19:17.2) T (LC): double click or right click and wear
p2a2496:(0:19:18.3) T: eh then you wear it let's see, no you don't have it on though.
p2a8192:(0:19:26.3) JoDa (LC): yes when i do it there a 'propiedades del iten del inventario
p2a2498:(0:19:28.9) T: mmm no that means that uh... if it says propiedades it means that you are right clicking. No right click, normal click, yeah? Normal double click.
p2a8193:(0:19:38.6) T (LC): normal
p2a2500:(0:19:40.5) T: with the left button
p2a8194:(0:19:44.5) T (LC): double click
p2a2502:(0:19:52.6) RuHa: yes and then?
p2a2503:(0:19:55.1) T: and then you should be wearing it. [2] To has it on,

In this example, three students are having trouble to put on their badge. The teacher repeats her instructions combining the voice and the text channel. She gives the first step through the text channel and then checks if the students find the object in their inventory, she then types the name of the object in the text chat. Jo and To confirm that they found the object in their inventory so then the teacher gives them the second step through the audio channel and then repeats the instruction through the text channel. ToSp shows understanding by asking for the following step. JoDa still has trouble and requests more help. The teacher clarifies her instruction and repeats the part that JoDa is doing wrong through the audio chat and through the text chat. Here, the text chat was a useful tool to provide sequenced instructions and to highlight key words in the instructions to aid in the students' understanding. Also, both the Jo and the teacher used the L1 when referring to terms from the interface menu, as the students had the interface in Spanish. Here, the teacher's use of the L1 had the aim minimizing the obstacles to understanding the technical instructions.

The third type of technical help was related to the students' technical sound problems with their microphone or audio.

p0a7878:(0:05:19.1) RuDo (LC): i can't here you cristina
p0a7879:(0:05:29.7) T (LC): make my volume louder
p0a7880:(0:05:44.5) RuDo (LC): como?
p0a7881:(0:05:52.4) RuHa (LC): sube el volumen
p0a7882:(0:05:57.0) T (LC): next to hablar
p0a7883:(0:06:08.6) T (LC): the little arrow

In this example, RuDo signals that she cannot hear the teacher. The teacher, using the text channel to make sure that RuDo receives the message, gives her instructions to fix that problem. RuDo signals non-understanding through a repetition request in her L1 and her classmate L1 translated the teacher's instructions. The teacher then completes the instructions by telling her how to make someone's volume louder, again, referring to the interface terms in the student's L1 to aid comprehension.

6.1.4.2. Tech help and activities.

There were hardly any instances of tech help during the discussion activity. This is probably due to the fact that students were sitting and were asked to participate verbally, they were not asked to perform any technical activity. There was only one instance of tech help with group A because a student was having problems with her microphone.

Table 19

Instances of tech help during the guided tour

T Tech help	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
TOTAL	18	14	4	4.6%

During the guided tour activity, the teacher did engage in more instances of tech help (see Table 19). These instances of tech help had the purpose of helping students with technical issues that arose during the guided tours such as how to use an elevator, how to turn off the streaming music, or how to interact with an object in *Second Life*. Students also engaged in two instances of tech help to help classmates who did not know how to turn off the streaming music.

6.1.5. Channel Checks.

There were 151 channel checks carried out by the teacher, while students initiated 44 channel checks. Teacher channel checks accounted for 5.5% of the total teacher turns. 91 checks were carried out during the procedural context, 40 were carried out during the fluency context and 15 were found in the task-oriented context. Nevertheless, there were no differences found in channel checks regarding the classroom context.

There were two main types of channel check: (1) checking for input (77 instances), ensuring students could hear the rest of the participants, and (2) checking student output (56 instances), making sure their microphone worked. Input checks were the most frequent

function in the channel checks, as they accounted for 51% of the channel checks, although output checks were also often used.

The following example illustrates a greeting routine, where the teacher checks if a student's headphones are working. As ArCh does not respond to the first channel check, the teacher switches to the written channel and repeats her request. ArCh then confirms the channel check, but mentions having problems to understand another student.

p4a9166:(0:04:29) ***T: Ar can you hear me, Ar***
*p4a9161:(0:04:35.5****) T (LC): ar can you hear us***
(0:04:35.8) ArCh: but uhm Jo no!

In the example below, the teacher engages in an output check. As there is no answer, 15 seconds later, she changes the addressee of the check and asks if anybody's microphone is working.

p1a1065:(0:22:11.2) ***T: somebody else, To can you speak?***
p1a1069:(0:22:26.0) ***T: can somebody speak****?*
(0:22:28.8) JoDa: yes

There were other types of channel checks found, with a much lower incidence (18 instances), which checked for the visual mode or for student presence. This presence check occurred when a student had been inactive for a while; the teacher would ask if the student was there to check for technical problems and also as a prompter to participate more actively.

p9a5039:(0:03:56.8) T: OK. ***Co? Me? Are you here?***
(0:04:06.0) MeBa: yes yes
(0:04:07.9) T: Do you want to take a seat?

In the example above, the teacher here has started the class sitting on a carpet, but Co and Me are standing up, in a static position and are not participating. The teacher checks that the students are present and then invites them to join the group and sit down. In *Second Life*, the avatar only assumes rest mode after 10 minutes of inactivity.

In the example below, the teacher has teleported to JoDa's location and JoDa is flying. The teacher calls out to him and asks checks if he can see her.

p3a5760:(0:32:07.1) T: Hello Jo. Hello Jo, ***can you see me?***
p3t8787:(0:32:11) JoDa is floating in the air
p3t8891:(0:32:17) T walks to JoDa
p3a5761:(0:32:17.4) JoDa: yes

6.1.5.1. General and directed channel checks.

Most of the teacher channel checks (103 out of the 151) found in the data were directed, that is, they had an explicit addressee. 84 of the directed channel checks had the name at the beginning of the turn whereas only 19 of the channel checks had the name at the end. This is probably because placing the addressee's name at the beginning of the turn, ensures the addressee's attention from the start.

In the first sessions, there were more general than directed channel checks. However, after the first three sessions, directed channel checks were predominant. The only session that had no directed channel checks was during one group's final task.

6.1.5.2. Channel checks within a class.

In most sessions there were between one and eleven turns devoted to channel checks. However, there was an unusually high occurrence of channel checks in three sessions: M2S3B, M3S1B and one final task. These three sessions had more than 20 channel checks per session. These classes have technical sound problems as a common denominator, more than one student had technical problems in each session. These technical issues caused disruptions to the normal functioning of the class, as in two of the classes the students had to deliver a presentation, and sound problems triggered frequent channel checks.

Although there were channel checks throughout the duration of the session due to technical problems, most channel checks, 87 out of 151, happened during the first 15 minutes of the class.

6.1.5.3. Channel checks and self-repetition.

Self-repetition was a discourse modification strategy that was present in 31 out of 151 of the channel checks, which accounts for 20% of the teacher channel checks. A self-repetition was usually triggered by a students' silence or non-response to the channel check, usually due to technical problems.

21 out of the 31 self-repetitions involved a channel switch (66%). Most of the channel switches with self-repetition and channel switch were directed, and used an explicit addressee both in the audio and in the written channel. Most of the strategies switched from the audio channel to the written channel and only on two occasions did the teacher switch from written to oral.

p4a5020:(0:00:55.4) ***T: hello Ar, can you hear me?***
p4a5024:(0:01:36.1) ***T: hello uh Ar, can you hear me?***
p4a5025:(0:01:42.4) ***T (LC): ar can you hear me¿***
p4a5026:(0:01:48.4) ArCh (LC): no
p4a5027:(0:01:48.7) T: oh oh
p4a5028:(0:02:01.6) T (LC): did you try ctrl p?
p4a5029:(0:02:09.4) ArCh (LC): now
p4a5030:(0:02:14.8) ArCh(LC): yes
p4a5031:(0:02:17.3) T: ah OK. [activates mic] OK, ***so now you can hear me, yeah? Ar? and can you talk?***
p4a9523:(0:02:35) ***T: can you talk, Ar?***
p4a5032:(0:02:49.1) ArCh (LC): im talking
p4a5033:(0:02:50.5) T: mm I can't hear you. Uhm you're in my: you're in my speakers list, yeah? so it means that your voice works,
p4a9525:(0:03:12) T: can you make sure that uh: do ctrl p, no? make sure that your microphone is uh: is activated, you know?
p4a5034:(0:03:22.1) T (LC): ctrl p

In this example, the teacher greets Ar at the beginning of the class and, in the same turn, starts a channel check. After waiting for 40 seconds, the teacher repeats her greeting and channel check again through the audio channel and then, uses the text channel for her channel

check. ArCh responds negatively to the channel check, so the teacher tries to provide technical help. The teacher then initiates another channel check, for both input and output, which she repeats 18 seconds later through the audio channel. ArCh types through the text channel that she is talking. The teacher then reminds her to check that her microphone is set up properly. In this example the teacher made frequent use of self-repetition and channel switches to overcome the communication obstacles with ArCh.

These channel checks were initiated as part of a greeting routine, like in the previous example, or due to communication problems or inactivity in a class discussion or task. The subsequent repetition with a channel switch was triggered by the addressee's silence as we have seen the previous example.

Regarding student reactions to the channel checks, there was no answer on three occasions. On the rest of the occasions, students answered either affirmatively, confirming that they could hear or use their microphone, or they signaled a technical problem. If there was a positive answer, the teacher answered with a feedback marker and if there was a technical problem, the teacher tried to provide technical help, as seen in the previous example.

6.1.5.4. Channel checks in two class activities.

As can be seen in table 20, there were very few channel checks during the discussion activity, as most of them happened during the greeting routine. There was just one student channel check and seven teacher channel checks found. The teacher engaged in seven channel checks with group A, but there were no channel checks with group B. The presence of channel checks was due to two reasons. Firstly, there was a student who was experiencing sound problems, so half of the channel checks were devoted to dealing with that problem. The other reason for channel checks were because some students were not participating actively so the teacher engaged in channel checks to see if they were having sound problems.

p5a8548:(0:9:34) T: and uh Ru, can you hear me? I haven't heard you very much.
p5a8881:(0:9:39) RuDo: Yes, yes
p5a8353:(0:09:40.0) ***T (LC): =Ru, can you hear me?=***
p5a5584:(0:09:40.7) T: ah, OK, perfect. You haven't been to San Francisco, have you?
p5a5585:(0:09:46.0) RuDo: no, I never

In this example, although apparently it was a channel check, it was also a prompter to elicit participation from the quieter students.

Table 20.

Teacher channel checks in the discussion activity and in the guided tour

T Channel checks	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion activity	7	4	3	4.9%
Guided tour	11	9	2	2.8%

Although there were more channel checks during the guided tour, the density of this strategy was lower than during the discussion activity. As channel checks were carried out at the beginning of the class, channel checks that occurred during the guided tour were prompted by sudden sound problems.

p6a9155:(0:50:04.8) T (LC): Ne
p6a9156:(0:50:08.0) T (LC): turn off your mic
p6a7007:(0:50:08.2) T: I think uh: Ne, there's problems with your microphones.
p6a7008:(0:50:14.6) KH: Cómo?
p6a7009:(0:50:15.3) T: There's a problem with your microphone ???
p6a7010:(0:50:19.9) KH: why?
p6a7011:(0:50:21.2) T: because when you're mic is on, I here a lot of echo
p6a9157:(0:50:23.5) T (LC): when you mic on
p6a7013:(0:50:25.8) KH: eco? I'm in my room, I don't know.
p6a7014:(0:50:31.4) T: no, yes, I mean that when you're microphone is on, I have voice problems. ***Can you hear me correctly?***
p6a7015:(0:50:38.6) KH: yes

In this example, suddenly the teacher gets echo whenever she uses the voice chat. That sometimes happens when another person's microphone is on. The teacher asks KH to

turn off her microphone, but KH does not understand what the teacher is saying. The teacher ends up using a channel check with her to ensure that she can hear everybody correctly.

6.1.6. Reception Check.

A reception check consists of checking if the recipient has received the sender's 'gift', namely a notecard, landmark, teleport offer or object. There were only seven instances of this strategy found in the data. The teacher engaged in reception checks for two reasons.

- As a response to students' appeal for help or clarification request.

p4a7420:(0:32:09.1) ToSp: sorry, where we have to go?
p4a7421:(0:32:10.5) T: to the Eiffel Tower. It's the:.. ***did you receive my: my notecard? =It's the first one.=***
p4a7422:(0:32:14.7) ToSp: yes yes

In the above example, the student engages in an appeal for help strategy in the first turn. The teacher responds to his question and checks if he has received her notecard correctly, as a possible cause for his appeal for help.

p7a8171:(0:17:02.1) RuHa (LC): I can't no save
p7a2467:(0:17:03.9) T: you can't save? you can't save, Ru? how strange! [2] when you click on it [3] you there's a: a window and it should say 'guardar'. wait let me pass one to you Ru.
p7a2468:(0:17:24.2) RuHa: I don't have the option
*p7a2469:(0:17:27.3) T: OK, I just passed you one****. did you receive it?*** *OK. try now.*
p7a2470:(0:17:33.6) RuHa: OK

In this example, RuHa asks for help because she cannot save an object from a museum. The teacher then gives her an object directly from her inventory and checks if she has received the object correctly.

- To check that everyone has received a class material correctly.

p4a9337:(0:45:17) T: mhm, OK, good! and if you go to the other side, you can do some parachuting too. Where is it? [2] here
p4a7486:(0:46:21.7) T: oh here it is, yeah. So if you want to try to uhm: do some parachuting, you have to click on this on this grey box? and you get a notecard and a: and some instructions.

*p4a9338:(0:46:45) T: Yeah**? did you receive it?** if you go to your inventory, to 'recent objects', [2] uy! no.*

In this example, the teacher cannot know if the students have received the object correctly, as she is not giving an object to the students, it is the students who interact with the environment directly, so the teacer engages in a reception check to ensure that the students obtained the object.

6.1.6.1. Reception checks in two class activities.

There were no student or teacher reception checks found in the discussion activity.

During the guided tour and there were only two teacher reception checks found in one session. One of these checks occurred just before a teleport to a new location, and was triggered by a student repetition request.

p4a7420:(0:32:09.1) ToSp: sorry, where we have to go?
p4a7421:(0:32:10.5) T: to the Eiffel Tower. It's the:.. ***did you receive my: my notecard? =It's the first one.=***
p4a7422:(0:32:14.7) ToSp: yes yes

Here the teacher made a reception check to ensure that the student had received the teleport links correctly.

6.1.7. Reception Confirmation.

Although there were few reception checks, participants employed several strategies to indicate presence, one of them being reception confirmation.

6.1.7.1. Teacher reception confirmation.

There were 16 instances of teacher reception conformations. The teacher used reception confirmations to indicate that she had received a student's notecard. These confirmations were always followed by an expression of praise or thanking plus the name of the participant who had sent the notecard. It was expected that the teacher would use the

participant's name, as the aim was to confirm that she had received the notecard from a specific student.

Teacher reception confirmations were only found in two sessions. Half of the reception confirmations happened during the first class, when students had to send the teacher a notecard, as part of their introduction to *Second Life*. The other six were found towards the end of M2S2, when students had to hand in the notes they had taken during the session. There were no reception confirmations for group B because they sent their notes via email after the class.

There were three types of reception confirmations found:

a) Praise (11 instances): the teacher praises a student to indicate that they have sent their notecard correctly. This was the most popular type of reception confirmation.

> *p1v9266:(0:14:59.1) T: T receives NoLe's note, presses show and closes it*
> *p1a978:(0:14:59.1) T: OK* ***very good*** *Nore*

b) Thanking (2 instances): the teacher thanks the student for sending her the notecard

> *p7v8079:(0:55:50.8) T receives ToSp's notecard.*
> *p7a8330:(0:56:04) T:* ***thank you*** *To.*

c) Thanking plus praise (2 instances): the teacher thanks and praises the student

> *p1v8210:(0:14:24.6) [T receives Sylvie's note, clicks on show and closes it*
> *p1a975:(0:14:32.0) T****: thank you*** *sylvie****, very good****…*

6.1.7.2. Student reception confirmation.

Students engaged in nine reception confirmations for two reasons:

a) As a reaction to the teacher's reception confirmation check.

Most student confirmations were triggered by the teacher's reception confirmation check.

> *p7a8247:(0:01:06) T: Did everybody receive the notecard?*
> *p7a8248:(0:01:11) RuHa:* ***yes***

b) As a response to tech help

When the teacher is giving instructions on how to do something and students confirm that they have got it.

> *p9a5364:(0:43:06.3) T: and then in items recientes, and in items recientes you should have a folder called 'objetos'. And inside objetos there's a hallucinations badge.*
> *p9a5366:(0:43:22.9) LaAd (LC)**: yess***

6.1.7.3. Reception confirmation in two class activities.

There were no reception confirmation messages found during the discussion activity. There was just one reception confirmation found during the guided tour and it was made by the student as a reaction to the teacher's reception check.

6.1.8. Identity Check.

Although when a participant speaks through their avatar, there are green sound waves above the avatar's head to signal visually who is speaking, when there are many avatars are standing together, it can be hard to identify who the speker is. The teacher engaged in identity checks at times, when she was unsure of the sender of the message. Nevertheless, the graphic environment did help to identify the speakers most times as there were few identity checks: the teacher engaged in twelve identity checks in total.

The checks consisted mainly of open questions asking who the speaker was followed by a name.

> *p1a1005:(0:18:54.2) T: **who's talking? oh co?** Wait a minute let me..*
> *1a9573:(0:22:29) T: =**Who= Who said yes? To**?*
> *p3a5654:(0:15:34.1) T: and Ru said Paris? **Is that Ru? Who said Paris? Ru o Pa? I'm not sure.***

6.1.8.1. Identity checks in two class activities.

There were no instances of identity checks found in either of the tasks.

6.1.9. Interface.

The teacher performed a range of different actions on the interface to manage the *Second Life* sessions. The most frequent actions were hiding windows followed by inventory searches for class material, opening IM windows and right clicking on the students' avatar.

The interface actions the teacher performed were classified into three groups: interface management, interaction with the graphic environment and interaction with participants (see Table 21).

Table 21.

Teacher interface actions

Interface management	
Camera controls	29
Hide window	136
Move window	13
Mic	58
Open inventory	14
Open notecard	99
Search inventory	133
Speakers	61
Stop player	8
Activate inventory object	12
TOTAL	**563**
Interaction with graphic environment	
Click object	65
Right click object	41
Teleport	49
TOTAL	**155**
Interaction with participants	
Notecard drag	34
Object drag	4
Open IM window	105
Right click on avatar	62
Send IM	53
Tp accept	6
Tp offer	72
TOTAL	**336**

The most frequent use was to manage the program interface and the inventory (53%). This was followed by using the interface to interact with participants, which accounted for 32% of the actions. The least frequent use was interaction with the graphic environment.

6.1.10. Overview of transactional strategies.

As we can see in Table 22, the most prominent strategies found in the data as a whole were feedback markers and addressivity followed by technical help and channel checks. The other strategies did not have a significant presence in the data. Although environment strategies such as technical help and channel checks did not have a high density during the discussion activity and the guided tour, channel checks were used often during the social greeting stage at the beginning of the class and both of these technical strategies had an important presence during the classroom management stages.

Table 22.

Frequencies of transactional strategies

Strategy	Number of occurrences	% transactional strategies	% of total T turns
Addressivity	588	34.6%	21.5%
Feedback markers	613	36.1%	22.4%
Time-saving devices	4	0.2%	0.1%
Technical help	307	18.1%	11.2%
Channel check	151	8.9%	5.5%
Reception check	7	0.4%	0.2%
Reception confirmation	16	0.9%	0.5%
Identity check	12	0.7%	0.4%

6.1.10.1. Overview of teacher transactional strategies in two tasks.

Table 23 shows that the strategies that were most used during the discussion activity were feedback markers followed closely by addressivity. Channel checks were also present in this activity. The rest of the strategies did not have a significant presence. Feedback markers were used to signal presence and understanding of the students' messages. Addressivity was used to provide positive feedback and encouragement and to manage turns to elicit participation.

Table 23

Summary of teacher transactional strategies during the discussion task

Strategy	Number of occurrences	% transactional strategies	% of T turns during disc act
Addressivity	35	42.1%	24.6%
Feedback markers	40	48.2%	28.1%
Time-saving devices	0	0	0
Technical help	1	1.2%	0.7%
Channel check	7	8.4%	4.9%
Reception check	0	0	0
Reception confirmation	0	0	0
Identity check	0	0	0

The most important strategies used during the guided tour were similar to those of the discussion activity: feedback markers followed by addressivity, technical help and channel checks. Feedback markers had a higher presence in this activity, it was an important strategy to show presence and encourage the students to continue holding the floor during the students' tours. Addressivity was used as a prompter for students to start their turn and as a means for input elicitation through directed follow-up questions. As this task involved location changes and was technically more complex than the discussion activity, there were instances of technical help and channel checks.

Table 24.

Summary of teacher transactional strategies during the guided tour

Strategy	Number of occurrences	% transactional strategies	% of T turns during guided tour
Addressivity	56	29.6%	14.3%
Feedback markers	102	53.9%	26.2%
Time-saving devices	0	0	0
Technical help	18	9.5%	4.6%
Channel check	11	5.8%	2.8%
Reception check	2	1%	0.5%
Reception confirmation	0	0	0
Identity check	0	0	0

6.2. Online Interactional Strategies

This section describes the interactional strategies found in the data. Interactional strategies are those strategies whose function is to establish and maintain interpersonal relationships.

6.2.1. Praise.

Praise was the most prominent interactional strategy. There were 141 occurrences of praise found throughout the data, 47 of which contained the name of the addressee. This strategy was present in all the sessions.

Most instances occurred in the fluency context (98) and had a task function (90). The teacher used a range of praise expressions like *good, exactly, perfect*, and 21 out of the 98 occurrences involved the teacher repeating the student's utterance as a form of acknowledgement.

> *p3a8546:(0:08:51) T: OK, uhm, well we're going to visit Paris, today, well, virtual Paris, let's see if we find all the monuments you were talking about, the Eiffel Tower, eh Notre Damme is also very nice. And the other picture that I wanted to show you is this one to the right, do you know what this is?*
> *p3a5577:(0:09:11.4) MaBe: Golden Gate?*
> *p3a5578:(0:09:12.2) T:* ***very good.*** *Where is the Golden Gate?*
> *p3a5579:(0:09:17.4) MaBe: San Francisco.*
> *p3a5580:(0:09:18.0) T:* ***exactly, San Francisco****. Ehm has anybody been to San Francisco?*

In the example above, the teacher asks two questions. The teacher praises the student after her answer to the first question and asks a follow-up question. The teacher then praises her again using 'exactly', repeats the student's answer as a confirmation, and proceeds to ask a new question.

> *p4a9237:(0:23:07.0) JoDa (LC): and it apears in important films*
> *p4a7336:(0:23:09.8) T: mhm, do you know any film?*
> *p4a9239:(0:23:13.9) JoDa (LC): Vertigo is an example*
> *p4a9240:(0:23:15.8) T (LC): aha in Vertigo! Alfred Hitchcock*
> *p4a9241:(0:23:23.4) JoDa (LC): yes*
> *p4a7341:(0:23:23.7) T: aha. OK!* ***Very good****! I didn't remember that Lombard street appeared in Vertigo****.*** *OK!* ***Good!*** *Should we move on to the next place or do you want to say something else about Lombard street?*

In this example, JoDa is giving a tour of San Francisco and he is talking about Lombard Street. He mentions that the street has appeared in important films and the teacher asks him which ones. When he answers, the teacher reacts by praising him, and also by providing an affective reaction to the content of his message, by expressing interest of having learned something new from the student and praising him again.

There were only four instances in this context that had a form function.

p10a3482:(0:09:34.4) T: OK. What about the second picture? the second one is very different. What words come to your mind when you see the second picture?
p10a3485:(0:10:04.1) KeHu (LC): how do you say locura?
p10a3487:(0:10:06.7) T: how do you say locura in English?
p10a3488:(0:10:08.3) KeHu (LC): crazyy
p10a3489:(0:10:08.6) T: ***ah good, Keisha, yeah, aha crazy, craziness****.*

In the example above, the teacher asks the class a question about a picture. KeHu cannot remember the word in English and asks for the translation of a word in her L1. The teacher echoes KeHu's question to the rest of the class and then KeHu ventures an answer in the text chat. The teacher praises KeHu, repeats her answer and then changes the form to a noun, to match her question.

The second context where praise was found was in the procedural context, although only 36 instances were found, 23 of which had a technical function. 18 of the instances with a technical function included the name of the addressee. The teacher used addressivity as a strategy of acknowledgement, to let the student know that they had performed the technical task correctly.

p7t8166:(0:16:32) KeHu is wearing her badge
p7a8174:(0:17:44.0) KeHu (LC): doble click y que más?
p7a2473:(0:17:46.7) T: Keisha, ***very good*** *you have it on aha very good Ne.*
p7a8176:(0:18:10.5) T (LC): you have it on, Keisha
p7a8177:(0:18:16.3) T (LC): just wait
p7a8178:(0:18:18.4) KeHu (LC): okei

Here, KeHu is asking for instructions as to how to wear a badge in *Second Life*. She did not realize that she already had it on. The teacher praises her using her name followed by a praise expression and tells her that she has it on. The teacher then repeats the she has the badge on through the text chat.

6.2.1.1. Praise and activities.

The strategy of praise was present in both tasks, but it had a higher density in the discussion task. Praise was used to give positive feedback to acknowledge a student intervention.

Table 25.

Teacher occurrences of praise during the discussion activity and the guided tour

T Praise	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion activity	18	18	0	12.6%
Guided tour	18	18	0	4.6%

During the discussion task, praise was used to confirm and provide positive feedback to student answers with the aim of creating a comfortable environment that promoted participation.

> *p5a8546:(0:08:51) T: OK, uhm, well we're going to visit Paris, today, well, virtual Paris, let's see if we find all the monuments you were talking about, the Eiffel Tower, eh Notre Damme is also very nice. And the other picture that I wanted to show you is this one to the right, do you know what this is?*
> *p5a5577:(0:09:11.4) MaBe: Golden Gate?*
> *p5a5578:(0:09:12.2) T**: very good**. Where is the Golden Gate?*
> *p5a5579:(0:09:17.4) MaBe: San Francisco.*
> *p5a5580:(0:09:18.0) T: **exactly**, San Francisco. Ehm has anybody been to San Francisco?*

In this example, the teacher is showing the students a picture of the Golden Gate. She asks the class what they see and MaBe answers. The teacher praises her to acknowledge her answer and asks a follow-up question, which MaBe also responds to. The teacher again offers

praise, repeats MaBe's answer, and then asks a further question. Often, a praising remark would be followed by a follow-up question.

During the tour, however, the aim of praise was not to promote participation, as the students were delivering their tour, here the aim was to provide positive feedback, acknowledgement and encouragement for the students to continue.

> *p8t9277:(0:17:23) T, MaBe and RuDo face the cathedral of Notre Damme*
> *p8a7664:(0:17:54.6) MaBe: eh: is situated in the island of La Cité which is surrounded by the waters of Sein, of the river Sein.*
> *p8a7665:(0:18:03.7) T:* ***mhm, very good****.*

In this example, MaBe is talking about the cathedral of Notre Damme, when MaBe finishes her turn, the teacher acknowledges her turn with a continuer followed by praise to provide encouragement to follow.

6.2.2. Agreement.

There were 45 instances of agreement found in the data, 40 of which had a task function.

42 instances of agreement were found during the fluency context. In fact, most instances of agreement were found at the beginning or end of the sessions (34). The sessions usually started and ended on the CETT Island, with a discussion sitting on a carpet. The session started with a warm up discussion or activity to introduce a task and ended with a discussion on the session.

> *(0:07:49.2) T: OK, well now what I would like to do is a little bit of brainstorming, yeah? Can you brainstorm three words-- what words come to your mind, to your head when you look at the Beatles painting, at the Beatles picture.*
> *(0:08:06.5) LaAd (LC): colorful*
> *p9a5080:(0:08:07.4) T: colorful, yeah.* ***That's the first thing that comes to my mind too****, mhm.*

In this example the teacher asks a question and a student offers and adjective in the text chat. The teacher reacts by repeating the student's contribution and agreeing with her idea.

The rest of instances of agreement were found during the students' final task (9).

(0:25:19.2) T: Do you know how much it costs? to to see a show? in the Moulin Rouge?
(0:25:24.8) MaBe: I don't know but eh: I think that it's expensive, eh?
p5a7707:(0:25:28.0) T: ***yeah. I think it's very expensive****. It must be very: interesting to go to a show, but yeah, I don't know how much it's -- it can cost.*

Here the teacher asks a student a question during their guided tour of Paris and a student ventures an answer to which the teacher agrees.

Although this strategy was used to give positive feedback and acknowledge a student's contribution, the main aim of agreement was to establish common ground and create a positive learning environment.

6.2.2.1. Agreement and activities.

There were few instances of agreement during both activities.

Table 26.

Instances of teacher agreement during the discussion activity and guided tour

T Praise	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion activity	3	3	0	2.1%
Guided tour	10	7	3	2.6%

There were only three instances of agreement used during the discussion activity.

p11a6046:(0:15:28.0) T: Can you tell us a little bit-- oh, you'll be there next summer? great! It's beautiful! La, could you recommend Ar places to visit in San Francisco that are-- you know? what is San Francisco-- what is interesting in San Francisco to see? There's a lot of things, eh? but..
p11a8855:(0:16:06.3) LaAd (LC): i weere only one day
p11a6048:(0:16:08.5) T: oh, you were only one day! what did you visit? ups! you were o-- uy! what did you visit?
p11a8856:(0:16:14.7) LaAd (LC): and i saw not many things

p11a6050:(0:16:15.9) T: ***yeah you need, yeah, you need at least a week to visit San Francisco****. What did you see?*
p11a8857:(0:16:27.3) LaAd (LC). but
p11a8858:(0:16:34.6) LaAd (LC): we across the golden gate
p11a6053:(0:16:35.5) T: OK, you crossed the Golden Gate, yeah, to enter San Francisco you need to: cross the Golden Gate. uhu

In this example the class is discussing what they know about San Francisco. LaAd mentions that she has been to San Francisco and Ar says that she will go there next summer so the teacher asks LaAd to recommend some places. She replies that she was only there one day and did not have time to see much; the teacher agrees with her and repeats her question to prompt LaAd to make a contribution. LaAd then mentions crossing the Golden Gate. By using agreement, the teacher tried to create a conversational atmosphere to build up student confidence and promote participation.

The instances of agreement that occurred in the guided tour occurred either in discussions after the tour or when there was a question during the tour.

p6t9342:(0:58:40) class stands in a circle
p6a9204:(0:59:52.5) T (LC): what part of SF di you like best?
p6a9205:(1:00:08.9) KH (LC): for the party the market castro
*p6a7115:(1:00:11.6) T****: [laughs] yes***
p6a9206:(1:00:13.2) MeBa (LC): me too
p6a9207:(1:00:17.0) T (LC): it's the trendy area
p6a7118:(1:00:24.0) KH (LC): but glden gate part it's beatiful
p6a7120:(1:00:33.3) T (LC): ***yes I love it! very peaceful****!*
p6a7122:(1:00:41.9) KH (LC): yesssss :S

In this example, the group has just finished their tour of San Francisco, and the teacher asks them what part they liked best. KeHu mentions the Castro district because of the lively music. The teacher laughs at her reason and agrees. Then KeHu adds that she also liked the Golden Gate Park. The teacher then uses a stronger agreement and with exclamation marks mentions that she also loved it, thus trying to establish common ground. KeHu reacts to the teacher's comment with an affirmative remark and an emoticon.

6.2.3. Inclusive Forms.

There were 78 instances of teacher use of inclusive forms during the classes in *Second Life*. The teacher used inclusive forms mostly to signal in-group status or to emphasize that she was playing a different role (28 instances) to that of teacher. Inclusive forms were also used to lessen the strength of imperatives (22 instances) and for other procedural purposes (14 instances).

a) To signal in-group status.

p11a9180:(0:54:00.4) KH (LC): a vale ya esta
p11a7063:(0:54:02.0) T: ah, OK. Perfect. ***OK, Me, we're ready.***

In this example, the student-guide is getting ready to give the guided tour, but there is a student who is having technical problems and cannot turn off the in-world music so Me waits for KH to fix her problem. KH signals that she has solved the problem and then the teacher tells the student-guide that they are all ready for the tour, using the inclusive form 'we' to indicate that the whole group is ready.

p9a9579:(0:33:33) T: where is La? [2] OK! [laughs] I imagine that La had to tell us ***that we have to: go to the roof.***
p9a5282:(0:33:41.4) LaAd (LC): hello
p9a5284:(0:33:43.1) LaAd (LC): yesss

In this example the students are in the middle of a tour and the guide disappears when they are inside the museum without saying anything. The teacher then uses the inclusive form to distance herself from the teacher role and signal her tourist or peer role. However, she ventures an interpretation using the inclusive form when the tour guide disappears. The guide confirms the teacher's interpretation.

The teacher used the inclusive form to emphasize that all the participants have the same role. Within the in-group status types, there two sub-types found.

Firstly, there were some instances of in-group status related to technical problems (12). This accounted for 43% of the in-group status type. The following example shows a

channel check triggered by student technical problems which makes use of two inclusive forms, *us* and *we*.

> *p4a9161:(0:04:35.5) T (LC): ar can you hear **us**?*
> *p4a9167:(0:05:55.2) T (LC): are you talking? **We** can't hear you.*

Other instances were used to emphasize that the teacher was playing the role of the tourist or student (16). This accounted for 57% of the in-group status instances.

> *p4a9186:(0:10:47) T: OK, OK! well, Jo and To you're the you're the guides, where should **we** start?*

As shown in this example, apart from the inclusive form, the teacher would sometimes remind students of their role to encourage them to take the lead and start their turn.

b) To lessen the strength of an imperative.

> *p1a850:(0:00:00.0) T: can **we** make a circle here? around the fire?*
> *p1a852:(0:00:22.4) T: (LC): can **we** make a circle around the fire[loud noise]*

Here, the teacher includes herself in the imperative to minimize the imposition.

c) For other procedural purposes.

> *p2a82:(0:09:38.6) T: **we'**re waiting for everybody. OK **we'**re waiting for the: for the rest of the class. are **we** all here now?*

The teacher used inclusive forms for a range of procedural purposes, such as indicating that they had to wait for the rest of the group before proceeding to the next location. In this example, the teacher uses three inclusive forms in the same turn. Again, by using the inclusive forms, the message conveys that the class is a community, and that each member is part of this group.

6.2.3.1. Inclusive form and classroom context.

Most inclusive forms were found in the fluency (39) and procedural (33) classroom contexts.

24 of the instances found in the fluency context had a logistics function. Inclusive forms with this function were used in turns aimed at starting an activity or prompting students to start their turn.

> *p4a5270:(0:31:29.1) T: OK! You're the leaders, girls. Tell **us** what to do now.*
> *p4t9696:(0:31:36) LaAd walks up the stairs to the next floor*
> *p4a9573:(0:31:41) T: What do **we** have to do now, girls? Ar? La?*
> *p4a5271:(0:31:52.2) ArCh (LC): go up*

In this example, the teacher is reminding Ar and La that they are the tour guides and using an inclusive form, signals that they should start their turn. Instead of indicating verbally what the group should do, they start walking up the stairs. The teacher then asks them, using another inclusive form and their names, what they have to do. Ar gives an order through the text chat.

As in the fluency context, most instances in the procedural context had a logistics function. Here inclusive forms were used:

- To minimize imperatives when organizing the classroom layout.

In the example below, the class has finished their warm-up discussion on the carpet and are going to a new location. The teacher, using inclusive forms, tells the class to stand up before teleporting to avoid technical problems.

> *p4a9549:(0:16:59) T: They also see things that are not real, mhm. OK, well we'll learn more about this sickness uh: during the tour. OK, well **let's** all stand up because **we're** going to go to the first museum and if **we** don't stand up **we're** going to have problems with the teleport.*
> *p4a5177:(0:17:25.5) T (LC): **let'** stand up*
> *p4t9645:(0:17:12) T stands up*
> *p4t9646:(0:17:17) MeBa and LaAd stand up*

- For time management.

The teacher reminded the students of how much time they had left in an activity using inclusive forms.

*p5a8680:(0:44:43.9) T (LC): ok jo, **we** only have 5 min left*
p5a8681:(0:44:59.8) JoDa (LC): ok just a minute

- For student checks.

Before starting a class or when changing to a new location, the teacher would check that all the students were present and if someone was missing, she would stall the activity and teleport the missing student.

p7a9220:(0:17:47) T: Wait, let's wait for To,
p7a9221:(0:18:30) T: Let's see if he's coming,
p7t9393:(0:18:56) ToSp appears
*p7a7292:(0:19:07.0) T: OK! are **we** ready?*
p7a7293:(0:19:11.5) JoDa: yes

In this example, a group is about to start their tour, but To is missing. The teacher, using an inclusive form, asks the class to wait for To. When To appears, the teacher asks if the group is ready to start, using again an inclusive form.

6.2.3.2. Inclusive forms and activities.

There were no instances of inclusive forms used during the discussion activity. On the other hand, inclusive forms were used frequently during the guided tours.

Table 27.
Teacher use of inclusive forms during the guided tour

T Inclusive forms	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Guided tour	22	20	2	5.7%

One of the main uses of inclusive forms during this student-led activity was to separate her teacher role from her tourist role. Through the inclusive form, she was trying to achieve an in-group status.

p6a9131:(0:38:49) NoLe: Uhm, seguimos, no?
*p6a6878:(0:38:50.3) T: mhm, [2] yes. **We** follow.*
p6t9248:(0:39:02) Class walks down the boardwalk, T follows

p6a6880:(0:39:22.7) NoLe: the ferry is not included in the guide, important.
p6a6881:(0:39:24.3) T: mhm [laughs]

In this example, they are in the middle of their tour around San Francisco. NoLe asks the teacher if they should continue the tour, and the teacher confirms her question and adds an inclusive form to her confirmation. By using the inlusive form 'we', the teacher is reminding NoLe that she is the tour guide and the leader, wheras the rest of the group, including the teacher, are tourists who will follow NoLe.

There was just one instance of student inclusive form found; when he was indicating what location the group should go to. On the other hand, the teacher made use of inclusive forms in all the group tours.

6.2.4. Humor And Small Talk.

The teacher did not initiate any jokes, however, there were frequent instances of laughing (29) as a reaction to situations that happened in-world or humorous comments that the students made. The teacher made use of the text chat twice to indicate that she was laughing and audible laughs could be heard in 27 instances.

Students, on the other hand, made humorous comments or used the text chat to indicate that they were laughing. There were 51 instances of humor identified in the form of laughter, joking reprimands, sarcasm, and in-world jokes. 37 of the student humor instances were carried out through the text chat. The instances of humor displayed familiarity and showed that students knew each other and had an off-screen relationship, as they were classmates.

Humor was identified in all sessions, however, there was a higher density of humor in the first session, which was a getting-to-know-you session where participants were experimenting with their new avatars and the environment.

p1a1007:(0:19:03.0) T: what avatar do you like best? The clothes, the hair,..

*p1a9282:(0:19:47.8) JoDa (LC)**: my 'falda' is the best I think***
*p1a1023:(0:19:51.9) T**: yeah I like Jo's skirt [laughs]***

This example was taken from the first session, it is the first time the students see each other's avatars and the teacher asks them to comment on their appearance. A male student, who was learning how to put on clothes and ended up wearing a skirt, makes joke and remarks that he likes his skirt. The teacher laughs and agrees with him.

Most of the small talk found in the data was MUVE talk. There were 33 instances found in the teacher's discourse and 47 found in student discourse.

The teacher used MUVE talk sometimes towards the end of the session to mention upcoming activities or locations they would be visiting.

p4a5482:(1:00:14.4) NoLe (LC): the other day
p4a5483:(1:00:16.2) T: mhm
p4a5487:(1:00:24.2) NoLe (LC): I visit a museum of Rome
p4a5488:(1:00:27.0) T: oh yeah?
p4a5489:(1:00:28.6) NoLe (LC): in SL
p4a5490:(1:00:29.2) T: whi- which one, Co?
p4a5491:(1:00:40.5) NoLe (LC): you can dress like a roman
p4a5492:(1:00:41.5) NoLE (LC): Xd
p4a5493:(1:00:41.8) T: oh! yes, I know the one that you're saying, it's excellent. It's excellent. Maybe we'll visit it. In March we're going to visit a: cities, you know? real life cities in SL? We'll visit uh: Barcelona, Paris, New York, and Rome, OK? because... and we're going to do something similar...

This example shows the end of the second module. NoLe tells the class that she visited a museum about Rome in *Second Life*. The teacher asks her to clarify which one and NoLe mentions something that people could do in the museum. The teacher then agrees with NoLe that it is a good museum and then uses the comment to introduce what they will do in the following module.

The teacher engaged in MUVE talk to invite students to try objects to interact with the environment or to make comments about the place they were in or other places that were find in *Second Life*.

p10a3643:(0:25:51.3) T (LC): who watns to sit at the piano?
p10a3645:(0:26:19.1) ToSp (LC): can I play the piano?
p10a3651:(0:26:19.5) ToSp (LC): but I dont hear the piano
p10a3646:(0:26:21) T (LC): you play the piano very well, to!
p10a3647:(0:26:24.7) T (LC): :-)
p10a3651:(0:26:39.0) ToSp (LC): but I dont hear the piano
p10a3652:(0:26:39.5) T: yeah uh we can't... no, you can't hear the piano.
p10a3653:(0:26:46.9) ToSp (LC): very bad

In this example, the group is in the Beatles museum, and the teacher invites them to interact with the environment by clicking on an object that animates the avatar that is sitting at the piano. ToSp sits at the piano and starts playing it. The teacher jokes and makes a comment about his piano skills. ToSp then makes a joke about not being able to hear the piano. In this example, the participants are engaging in MUVE talk as well as humor. These two strategies were often found together due to the playful nature of the environment.

6.2.4.1. Humor and activities.

There were no instances of humor, laughs or MUVE talk by any participant in the discussion activity. On the other hand, there were some instances of teacher and student humor as well as MUVE talk during all the guided tours.

Table 28.
Use of humor during the guided tour

Humor	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Teacher	8	8	0	2%
Students	9	6	3	2.6%

In the following example, the group is around the Eiffel Tower. There are lots of users in that area that do not belong to the class. There are a group of avatars that are playing a silly tune and dancing to it.

p7a9294:(0:36:45.1) ToSp (LC): I lsiten music wiki wiki
p7a7444:(0:36:46.8) [T laughs]
p7a9296:(0:37:06.7) ArCh (LC): me toooo

p7a9297:(0:37:08.6) T (LC): yes!
p7a9298:(0:37:12.6) ArCh (LC): jajajaj

ToSp makes a comment about the music, the teacher laughs and ArCh agrees with him and indicates laughing through the text channel. As the classes took place in public areas, there was a certain degree of unpredictability regarding who would be in the area and that added an element of surprise and playfulness at times. The fact of making jokes and laughing contributed to relaxing the atmosphere.

There was no MUVE talk during the discussion activities, however both the students and the teacher engaged in MUVE talk during the guided tour.

Table 29

Use of MUVE talk during guided tour

MUVE talk	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Teacher	16	16	0	4.1%
Students	21	11	10	6%

During the guided tours, off-task MUVE talk often happened when teleporting to a new location. Students then would sometimes make remarks about the location, like in the following example:

p6t9272:(0:51:44) T, NoLe, MeBa and KeHu teleport to Castro
p6a9160:(0:51:53.8) KH (LC): WOWWWWWWWWWWWWWWWWWW
p6a9161:(0:51:58.8) KH (LC): do you listen music?
p6a9162:(0:52:06.5) NoLe (LC): q caña tiene el lugar XD
p6a9163:(0:52:12.7) KH (LC): jajajajajjaaja

In this example, the group has just teleported to a new location in San Francisco and there is loud music playing.The students get excited when they hear the music: KH uses capitals and lengthens the last letter to express surprise, and NoLe mentions in her L1 that this place is very cool with a smiley emoticon. The students used both the voice and the text chat equally when using humor.

Through MUVE talk, participants display an awareness of the environment and its unpredictable nature and this contributes to creating a more relaxing and positive atmosphere.

6.2.5. Character Names.

When a person creates an avatar in *Second Life*, the user can choose any first name they want and they have to select a last name from a list. Thus, participants have the opportunity of creating their own virtual persona, including their name. However, most students chose not to change their real name. Out of the 9 students who completed all the modules, only three chose to use a fictional character name.

The teacher made use of character names on 81 occasions throughout all the sessions, however, she did not use their character names consistently, resorting most of the times to their real life names. The table below compares the frequencies of teacher use of character and real life names for each student who chose a fictional name.

Table 30

Teacher use of student character names

Students who adopted character names	SL character name	Real life name
Maia	27 (24%)	85 (76%)
Nore	13 (11%)	104 (89%)
Keisha	33 (34%)	63 (66%)

As we can see, even with the students who had chosen a character name, the teacher preferred to use their real life name although she used both names.

6.2.5.1. Character names and activities.

There was just one instance of character name found during the discussion activity, used by the teacher. There were no instances of character names found in the guided tour activity.

6.2.6. Paralinguistic Strategies.

There was very little evidence of teacher and student use of non-standard punctuation. There were three types of non-standard punctuation identified: uppercase, exclamation marks and emoticons.

6.2.6.1. Uppercase.

The teacher just used uppercase six times and this strategy was only found in the first session. The teacher might have used this strategy for emphasis, to attract attention and as a way of separating her turns from her students' turns for clarity purposes. A reason why the teacher didn't carry on using this strategy in latter sessions could be that there were many participants during the first session and this caused some confusion. As a result, the group was split into two in the latter sessions. Because the class size decreased thanks to that arrangement, the teacher may have not found it necessary to use uppercase.

p1a9183:(0:00:28.3) T: (LC): EVERYBODY, CAN YOU TURN OFF YOUR MICS?
p1a9184:(0:01:30.2) T (LC): CAN EVERYBODY HEAR ME?

Here, the teacher uses upper case as an attention-seeking strategy because many students were writing on the local text chat at that time.

The students, however, made use of this strategy in 41 occasions, with the purpose of adding emphasis.

p8a3940:(0:58:14.0) T: nobody liked the skezophrenia museum?
p8a3946:(0:58:24.8) KeHu (LC): ***NOOOOOOOOOOOOOOO***

6.2.6.2. Exclamations marks.

No instances of teacher exclamation marks were found in the data. Again, students did make use of exclamations marks (14) to complain, ask for help, show enthusiasm, or to call someone's attention.

p10a3720:(0:33:12.7) KeHu-T (IM): the music doesn't stop!!!!!

In this example, Ke is using five exclamation marks to complain about the music in *Second Life*.

6.2.6.3. Emoticons.

The teacher hardly made use of emoticons, in the data, only three instances were found of the teacher using a happy smiley. Students, on the other hand, used emoticons on 30 occasions to express happiness, uncertainty or surprise.

6.2.6.4. Paralinguistic strategies and activities.

Paralinguistic strategies in both tasks were anecdotal. There were no instances found of teacher use and there were only three instances of student non-standard punctuation.

6.2.7. Greetings And Leave Takings.

There was a high frequency of teacher greetings found in the data, which was expected, as greetings were always part of the beginning routine. 58 out of the 93 teacher greetings found corresponded to the social context of the class, which happened at the beginning or at the end. The rest of the greetings occurred during procedural contexts, when changing locations. The teacher used the voice channel for the greetings, except for nine occasions, when students were having sound problems.

There were three different types of greetings found in the data: greetings with no addressivity (13 instances), greetings with addressivity (11), greetings with addressivity followed by a channel check (24).

Greetings followed by the name were more numerous than greetings that had no name as directed greetings accounted for 73% of the total of greetings. Furthermore, the most frequent type of greetings included addressivity followed by a channel check. Thus, an important function in greetings was to check for the students' sound.

The greetings that happened at the beginning of the class usually had a greeting expression plus the name of the participant. The greeting would be then often followed by a channel check either in the same turn or in the following turn. There were no greetings followed by channel checks without a name.

p4a7169:(0:02:39.4) T: oh! Ar is here.
p4a9156:(0:02:51.2) ArCh (LC): hello
p4a7171:(0:02:51.7) T: ***hello Ar!*** *Does your voice work, Ar?*
p4a9158:(0:03:20.9) T (LC): ar, can you speak?
p4a7175:(0:03:34.4) ArCh: --o!
*p4a7176:(0:03:35.4) T****: hello!*** *OK, perfect.*

In this example, the teacher greets Ar and in the same turn, performs a channel check. As Ar does not answer, 29 seconds later, the teacher switches to the text channel. ArCh then greets the teacher through the voice channel as a confirmation that her voice is working. The teacher then greets her again to confirm that she has been heard.

Although most times the teacher used an explicit channel check after a greeting, sometimes, the greeting routine was integrated into the channel check, making the channel check covert.

p11a6339:(0:00:13.0) T: ***hello Me!***
p11a6340:(0:00:28.7) MeBa: hello:!
p11a6341:(0:00:29.8) ***T: hello Me! How are you?***
p11a6342:(0:00:33.9) MeBa: fine thanks.

In this example, the student answered to the teacher's greeting using the audio channel, thus proving that her microphone and sound was working.

As regards leave takings, all of them except for one were general. Leave takings were usually followed by a reference to their next encounter.

6.2.7.1. Greetings, leave takings and activities.

There were no instances of this strategy found in either of the activities because greetings and leave takings occurred at the beginning and end of the class respectively.

6.2.8. Negative Politeness: Apologies.

The teacher used negative politeness in the form of apologies. There were 35 instances of this strategy found in my data. The teacher used apologies to:

a) Ask for repetition. This was the most frequent category. When apologies were used to ask for repetition, usually the apology was followed by the student's name.

p3a5616:(0:11:56.2) JoDa: =???=
p3a5617:(0:11:57.7) T: ***sorry,*** *Jo?*

In this example, Jo is having microphone problems and his voice is incomprehensible. The teacher asks him to repeat through a directed apology.

b) For own technical problems or off-world interruptions. Sometimes the teacher had technical problems and had to reboot the computer, like in the example below.

p2a2:(0:00:03.3) T: hello:, it's me again, I'm sorry. I had to change my avatar. My computer froze

6.2.8.1. Apologies and activities.

There were five instances of teacher apologies found during the discussion activity. All of them made reference to technical sound problems and four of them were repetition requests.

p5a5615:(0:11:45.3) T: aha, exactly, yeah yeah, that's true. Flowers and what other thing, what other things are typical in San Francisco? =???=
p5a5616:(0:11:56.2) JoDa: =???=
p5a5617:(0:11:57.7) ***T: sorry, Jo?***
p5a5618:(0:12:00.6) JoDa: China Town

In this example, the teacher cannot hear JoDa due to technical problems so she apologizes using his name to ask for repetition.

Table 31

Teacher apologies during the discussion activity and guided tour

T apologies	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion activity	5	5	0	3.5%
Guided tour	7	4	3	1.8%

As with the discussion activity, most teacher apologies during the guided tour were triggered by technical sound problems and were repetition requests.

The students issued two apologies, one was a repetition request and another one was an apology for making a mistake.

6.2.9. Overview of interactional strategies.

The teacher engaged in a range of interactional strategies with the aim of creating common ground with the students as well as creating a comfortable and positive learning environment. The chart below shows a summary of the interactional strategies found in my data. The strategy that had a highest presence was praise, followed by greetings and leave takings, use of character names and inclusive forms.

Table 32

Frequencies of teacher interactional strategies

Strategy	Number of occurrences	% of all interactional strat	% of total T turns
Praise	141	25.2%	5.1%
Agreement	45	8%	1.6%
Inclusive forms	78	13.9%	2.8%
Humor	29	5.2%	1%
Off-task talk	33	5.9%	1.2%
Character names	81	14.5%	2.9%
Non-standard punctuation	23	4.1%	0.8%
Greetings & leave takings	93	16.6%	3.4%
Apologies	35	6.2%	1.3%

Praise was mainly used for task purposes. This strategy was used to provide a safe online environment and to encourage students to participate. Greetings and leave takings were widely used during the beginning and end of the class.

The use of character names was also a frequently used strategy, which aligns with the high use of addressivity found in the data. The use of character names contributed to provide a more immersive feeling in the virtual world. Inclusive forms were also widely used as a strategy to create common ground and in-group status as well as a strategy to indicate a shift in the teacher's role to that of a tourist.

On the other hand, off-task talk, special punctuation and humor were seldom found in the data. This shows that the teacher and students perceived the sessions as formal learning contexts and did not engage in playful behavior.

6.2.9.1. Overview of strategies per task.

The most relevant interactional strategies in the discussion task were praise, apologies and agreement. The other strategies had either no presence or not a significant one.

Table 33

Interactional strategies during the discussion activity

Strategy	**Number of occurrences**	**% of all interactional strat**	**% total T turns in act**
Praise	18	67%	12.6%
Agreement	3	11%	2.1%
Inclusive forms	0	0	0
Humor	0	0	0
Off-task talk	0	0	7%
Character names	1	4%	0.7%
Non-standard punctuation	0	0	0
Greetings & leave takings	0	0	0
Apologies	5	19%	3.5%

There was a higher density of strategies during the guided tour. The most prominent strategy was praise, as in the discussion activity, followed by the use of inclusive forms and agreement.

Table 34

Interactional strategies during the guided tour

Strategy	Number of occurrences	% of all interactional strat	% total T turns in act
Praise	18	20.4%	4.6%
Agreement	10	11.3%	2.6%
Inclusive forms	22	25%	5.7%
Humor	8	9.1%	2%
Off-task talk	16	18.1%	4.1%
Character names	0	0	0
Non-standard punctuation	0	0	0
Greetings & leave takings	7	7.9%	1.8%
Apologies	7	7.9%	1.8%

6.2.1. Overview of discourse management strategies.

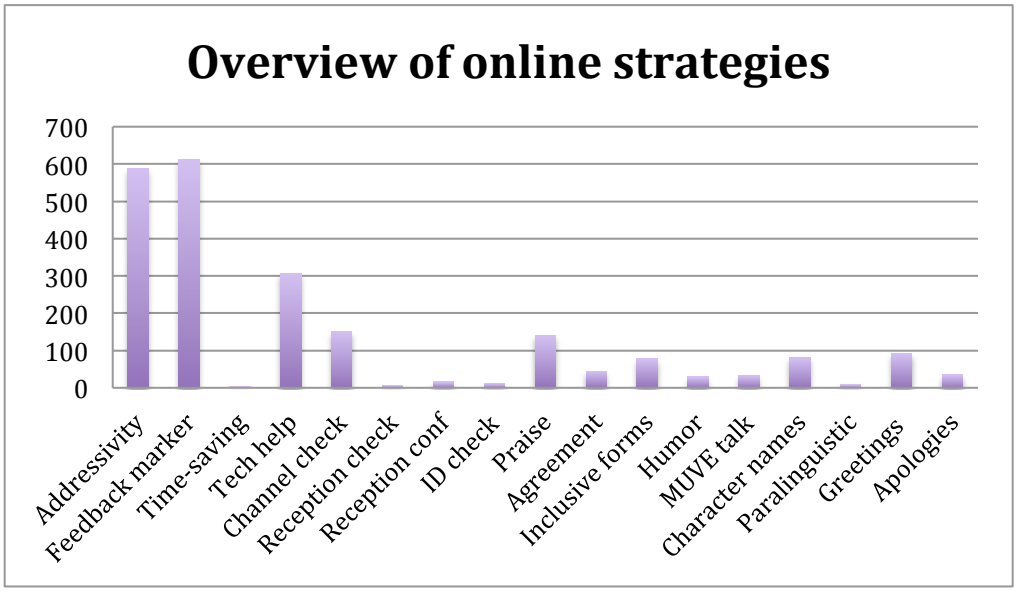


Figure 19. Overview of online strategies

Overall, the discourse management strategies that were used more frequently were four transactional strategies: feedback markers, addressivity, technical help and channel

checks. Followed by interactional strategies such as praise, greetings and leave takings and use of character names.

6.3. Teacher Interactional Modifications

This section describes the interactional modifications that the teacher engaged in with her students. The teacher interactional modifications analyzed in this section are clarification requests, confirmation and comprehension checks, self-repetitions and self-reformulations.

6.3.1. Clarification Requests.

There were 21 teacher clarification requests found in the data, most of which were carried out through the voice chat (18 out of 21 instances). Teacher clarification requests were triggered by students' unclear statements and used to push the students' output to clarify their utterances. Most clarification requests had a task function (11 instances), but there were also clarification requests with a logistics (4 instances) or technical (4 instances) purpose.

The classroom context with more clarification requests was the fluency context, which accounted for 17 clarification requests, 11 of which had a task function.

> *p2a7939:(0:10:06) T: OK here we have a couple of 3D objects, but since we don't have very much time, we're going to skip the computer one, but it's nice to see, and let's go in the next room. [3] what do you think about this one? [reads] I'm here in the tunnel. how do you feel when you see this one?*
> *p2a7894:(0:10:59.3) MaBe (LC): its a game*
> *p2a90:(0:11:02.3) T: it's a game? Pa?* ***what kind of game?***
> *p2a7895:(0:11:06.4) MaBe (LC): with*
> *p2a92:(0:11:15.0) MaBe: game lights*
> *p2a93:(0:11:17.6) T:* ***wha what's that? game lights?***
> *p2a7897:(0:11:33.3) MaB (LC): i dont know how can i explain it*
> *p2a96:(0:11:36.0) T:* ***you've played this game?***
> *p2a8101:(0:11:42) MaBe (LC): game lights*
> *p2a7898:(0:11:46.8) MaB (LC): no*

In this example, the class is in an art gallery and the teacher asks the students about an artwork that is on display. MaBe answers the questions in turn 1 using the local chat. The teacher does not understand what she means and engages in a confirmation check followed

by a clarification request. The student then switches to the audio channel and gives an answer. The teacher still does not understand and makes a further clarification request. Then MaBe switches to the written channel and abandons her message. The teacher tries again with a third clarification request and then MaBe repeats her previous answer in the written channel. In this example, although the teacher engaged in three clarification requests, the student did not expand her output.

There were also some clarification requests with a logistics purpose found in the fluency classroom context.

p6a9113:(0:34:24) T: OK! well start when you're ready
p6a6833:(0:34:28.3) NoLe: well, go ahead.
p6a6834:(0:34:32.3) T: ***where?*** *OK*
p6t9115:(0:34:32.3) [NoLe and MeBa walk]

In this example, NoLe starts the guided tour of San Francisco and orders the group to move ahead without indicating the direction. The teacher then asks for clarification and then realizes that NoLe has started walking and she meant for the group to follow her. Here there is no verbal clarification, however, the intended meaning is clear with the student's non-verbal behavior. Something similar happens in the next example, however, the nature of the student's reaction is different:

p10a3819:(0:44:02.0) JoDa: hello
p10a3823:(0:44:21.1) RuHa (LC): what
p10a3824:(0:44:25.0) T (LC): ***sorry?***
p8a3825:(0:44:34.5) T (LC): ***should we follow you?***
(0:44:38.4) JoDa (LC): in this museum there are a lot of strange rooms
(0:44:52.4) ToSp: come with us [p]

In this example, the group is at the entrance of the museum and the student-guides are in charge of the tour. The guides start walking in and delivering the tour without giving the group instructions as to what to do. The teacher then engages in a clarification request and

asks the guides for instructions. In this case, another student from the group clarifies verbally that the rest of the class should follow them.

Other times, the students negotiated whose turn it was to hold the floor:

p7a7440:(0:36:14.8) T: OK uh who starts? La or Ar?
p7a9292:(0:36:27.4) LaAd (LC): ari
p7a9293:(0:36:44.1) ArCh (LC): la comences tuuuu
p7a9300:(0:37:25.9) T (LC): ar, ready?
p7a9301:(0:37:56.4) ArCh (LC): i think that i do moulin rogee
p7a9302:(0:38:01) ArCh (LC): we have a confusionn
p7a9303:(0:38:12.5) LaAd (LC): valee ari.. xd
p7a9304:(0:38:14.1) ***T (LC): ohh you are both doing moulin rouge?***
p7a9305:(0:38:14.5) LaAd (LC): okk
p7a9306:(0:38:19.4) LaAd (LC): nono

In this example, La and Ar are arguing about who is supposed to start the guided tour, after the teacher uses two questions to prompt them to start, she uses a clarification request to find out who is supposed to do that part of the tour.

Regarding clarification requests during the procedural context, all four of them were triggered by technical problems. Sometimes, the students asked for help, and the teacher used clarification requests to get more information on the problem. In the following example, it is a student who provides technical help to her classmate:

p3a3056:(0:30:19.2) MeBa (LC): BUT IT DIDN'T PUT PONERSE
p3a3057:(0:30:22.4) T: no? ***what did it put Me?*** *What does it say Me? Maybe we can help Co. what does it say?*
p3a3058:(0:30:32.0) MeBa: nothing I just ??? [fuzzy sound]
p3a3059:(0:30:37.3) NoLe: no te escucho
p3a3060:(0:30:39.0) T: yeah, me either. ***Me, what did you do?*** *just double click?*
p3a3061:(0:30:43.0) MeBa: yes

In this example, NoLe is having problems to put on a badge from her inventory. The teacher is guiding her through the different stages but NoLe is still having problems. Then MeBa mentions a different way of putting on the badge. The teacher then engages in a

clarification check asking her to clarify what she did to put on the badge. MeBa's sound is not good, so NoLe asks her to repeat and the teacher repeats her clarification request.

6.3.1.1. Clarification requests and student reaction.

Although there were few clarification requests used in the data, most of the times, the students reacted by modifying their output (14 instances). Nevertheless, there were also instances of code switch (2 instances), no reaction (2 instances) and message abandonment (1 instance) found.

Most clarification requests had a task function and were used as a reaction to a student's unclear, but not necessarily incorrect, output. The function, thus, was to push the students to clarify their output during a task or when they were asking for technical help.

6.3.1.2. Clarification requests and activities.

This strategy did not have a relevant presence in the activities as there were few clarification requests found in the discussion activity and in the guided tours.

Table 35

Teacher clarification requests during the discussion and the guided tour

T clarification request	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion	4	4	0	2.8%
Tour	3	2	1	0.8%

During the discussion and guided tour activities, the teacher used clarification requests triggered by students' unclear output.

p5a5588:(0:09:54.0) T: uhm, what is famous about San Fransico?
p5a8560:(0:11:01.3) JoDa (LC): and a lot of flowers
p5a5609:(0:11:03.2) T: uhm a lot of flowers? ***where, Jo? in uh Lombard street or all over San Francisco?***
p5a5613:(0:11:34.4) T: Ma ma-- Joi? what uhm: ***when you say flowers, what do you mean?*** *flowers in Lombard street or all over San Francisco?*
p5a5614:(0:11:44.5) JoDa: in Lombard Street

In this example, JoDa responds to the teacher's statement with an ambiguous remark. The teacher then uses a confirmation check followed by a clarification request to push the student to clarify his output.

6.3.2. Confirmation Checks.

The teacher engaged in 161 confirmation checks, 155 of which took place through the audio channel.

a) Fluency context

Half of the confirmation checks were found in the fluency stage (83), 47 of which had a task function. The main purposes for confirmation checks found in this stage were:

- For clarification purposes. Sometimes the teacher repeated what a student had said with a questioning tone for clarification purposes.

p3a5588:(0:09:54.0) T: uhm, what is famous about San Fransico?
p3a8560:(0:11:01.3) JoDa (LC): and a lot of flowers
p3a5609:(0:11:03.2) T: ***uhm a lot of flowers****? where, Jo? in uh Lombard street or all over San Francisco?*
p5a5614:(0:11:44.5) JoDa: in Lombard Street
p5a5615:(0:11:45.3) T: aha, exactly, yeah yeah, that's true. Flowers and what other thing, what other things are typical in San Francisco? =???

In this example, the teacher asks the class what they know about San Francisco. JoDa provides an answer that the teacher does not understand. The teacher then repeats JoDa's answer in a questioning tone and engages in a clarification request.

- To express interest or surprise.

p4a9487:(0:28:28) T: I have a difficult question, [laughs] uhm: do you know--? I don't know, it's very difficult, huh? but do you know why the Golden Gate is called the Golden Gate if it's not golden?
p4a7378:(0:28:52.7) JoDa: I know
p4a7379:(0:28:53.2) ***T: ah, you know Jo? why?***
p4a7380:(0:28:57.2) JoDa: I think it's eh: because the Spanish people,...

In this example, the teacher asks the guides a question about the Golden Gate. JoDa says that he knows the reason. The teacher repeats his answer in an interrogative tone, expressing surprise that someone knows the answer and the prompts him to explain why.

- To confirm a student's message.

p2a8117:(0:05:9) T: OK! who else? mhm we only have time for one more. Who else found a painting that they liked?
p2a45:(0:-05:22.0) MaBe: the next one
p2a46:(0:05:26.4) T: can you point at it? Maia
*p2a49:(0:05:34.9) T**: OK the one to the left yeah?** [2] what do you like about it Maia?*

Here the teacher is asking which painting the like the most in an art gallery. A student answers by using a deictic, which is unclear, as the student does not point to the picture. The teacher asks her to point to avoid confusion and then the teacher uses a confirmation check to make sure that she knows what painting she is referring to and to clarify for the rest of the class.

p11a8846:(0:14:38.5) T (LC): what can you see in this picture?
p11a6031:(0:14:42.5) NoLe: the bridge bridge
11a6032:(0:14:44.6) T: what's the name of this bridge? It's it's
p11a8847:(0:14:45.8) ArCh (LC): a chirch
p11a8848:(0:14:50.5) ArCh (LC): church
*p11a6036:(0:14:51.6) T: **a church?** mmm there's no church here, I think, oh yeah! it looks like a: I think it's the woods, the forest. But what's the name of this bridge? It's one of the most important uh. symbols in San Francisco,*

In this example, the teacher shows the class a picture of the Golden Gate and asks them about the picture. NoLe and ArCh provide two different answers: the bridge and the church. The teacher repeats ArCh's response in a questioning tone, looks at the picture again and sees a small church in the background. She then moves back to NoLe's answer.

The logistics function was the second most popular function in the fluency context, although there were only 15 instances with this function. The teacher used confirmation checks to confirm the next person to hold the floor or the following destinations during tours.

p7a7267:(0:13:58.3) T: =OK!= Uhm, where should we start in San Francisco? Where where should we go?
p7a7268:(0:14:04.5) JoDa: ???
p7a7269:(0:14:07.8) T: sorry?
p7a7270:(0:14:12.9) JoDa: ???
p7a7271:(0:14:16.2) ToSp: what?
p7a7272:(0:14:17.2) T: I can't understand
p7a7273:(0:14:17.9) JoDa: ?? Lombard Street?
p7a7274:(0:14:21.2) ***T: OK. Lombard street?***
p7a9198:(0:14:22.4) ***T (LC): Lombard street?***
p7a7276:(0:14:22.6) ***T: should we start in Lombard street?***
p7a7277:(0:14:24.9) JoDa: yes, ?? Lombard street.

In this example, the teacher is asking JoDa where the tour starts. However, JoDa is having microphone problems and the class cannot understand him. After a repetition request, the teacher starts a confirmation check to ensure that she has understood his message correctly. In fact, the teacher repeats her confirmation check three times, first through the voice chat, then she switches to the text chat and finally she repeats it again in the voice chat. In the last turn, JoDa confirms the teacher's check.

b) Procedural context

Most confirmation checks found in the procedural context had a technical function, which accounted for 40 out of the 57 confirmation checks in this context. Many of them were related to sound problems.

p9a9675:(0:30:50) T: Vi, can you hear us?
p9a1155:(0:30:54.3) MeBa: Vi!
p9a9344:(0:30:57.0) ElMc: (LC) i cant hear you
p9a1157:(0:30:59.9) ***T: oh you can't hear?***
p9a9345:(0:31:07.1) ***T (LC): you can't hear us?***
p9a9346:(0:31:10.3) ElMc (LC): but you don't hear me i think
p9a1160:(0:31:18.5) T: no,

In this example the teacher and MaBe are calling ElMc because she is not responding. Through the text chat, ElMc signals sound problems. The teacher makes a confirmation check through the voice chat and realizes that she cannot hear so she repeats her confirmation

check through the text channel. Here the teacher uses two confirmations checks, one in each channel, as a prompter for ElMc to expand on her problem and give her more information.

Some confirmation checks with a technical function consisted of one-word checks such as 'no?' and were used as stalling strategies.

> *p3a3041:(0:29:17.6) T: you will see something yellow on your shirt. you see that I have like a yellow circle? that's what you should have. did you find the the: the hallucinations badge in your inventory? in items recientes?*
> *p3a3042:(0:29:29.0) NoLe: no*
> *p3a3043:(0:29:29.8) T:* ***no?*** *items recientes?*
> *p3a3044:(0:29:31.5) NoLe: no*

Here, the teacher is helping NoLe put on her badge, however, NoLe states that she does not see what the teacher is referring to. The teacher the makes a confirmation check and repeats the last part of her instruction in an interrogatory tone. This confirmation check is used as a stalling strategy to give the teacher time to think of another way of dealing with the technical problem.

c) Task-oriented context

Most confirmation checks in the task-oriented context were task related, they had either task or form function. Half of the confirmation checks (10 out of 21) had a task function.

Sometimes students' messages were vague or not formulated accurately, and the teacher ventured an interpretation of what the student meant.

> *(0:55:29.9) T: OK do you, do you need any help? Can you tell me what surprised you the most of this museum? what you would like to show?*
> *p6a3257:(0:55:46.2) NoLe: =the floor=*
> *p6a3258:(0:55:47.7) T:* ***the floor that disappears? Mhm***
> *p6a3259:(0:55:51.3) NoLe: yes =uhm=*

Here the student gives an incomplete answer to the teacher's question, and the teacher, through a confirmation check guesses what she meant when she mentioned the floor.

There were also five confirmation checks found that had a form function.

p6a3240:(0:53:42.3) MeBa: Cristina, enfermos? how do you say?
p6a3241:(0:53:47.7) T: ***uhm sick people? ill people?***
p6a3245:(0:53:59.4) MeBa (LC): SICK PEOPLE?
p6a3247:(0:54:06.1) T: yeah sick people, exactly. Mhm
p6a3248:(0:54:17.0) T (LC): people with a mental illness
p6a3252:(0:54:54.4) T: yeah?
p6a3253:(0:55:00.6) MeBa (LC): YES

Here a student asks the teacher for help translating a lexical item. Since the teacher does not have a context, she offers a word using a confirmation check to make sure that it is the word MeBa is looking for. MeBa also engages in a confirmation check, she probably sent the text message before hearing the teacher's answer.

6.3.2.1. Confirmation checks and tasks.

There were instances of confirmation checks found in both tasks.

Table 36

Teacher confirmation checks during the discussion and guided tour

T confirmation check	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion	7	7	0	4.9%
Tour	18	18	0	4.6%

In the discussion activity, some were used as echo questions, echoing a student answer to make sure that the teacher had understood correctly. Others were used as clarification requests.

During the guided tour there was a higher frequency of confirmation checks although the density was lower. There were also some echo questions, especially when there were technical problems. There were also confirmation checks to push the students' output, like here:

p4a7533:(0:52:42.2) T: was the filme Moulin Rouge with Nicole Kidman and ah: who was the other one Ethan Hawke was it? uh: Was it filmed here? In Paris? In the Moulin Rouge

p4a7534:(0:52:59.3) ArCh: yes,
p4a7535:(0:53:00.1) T: mhm, ***yes?***
p4a7536:(0:53:04.9) ArCh: no?

Here the teacher uses a confirmation check to try to push the student's output, although she is unsuccessful at it.

Other confirmation checks were used to express interest and surprise:

p4a7499:(0:49:42.6) ArCh: and: the entrance cost 105 euros. [2] Very expensive.
p4a9348:(0:49:51.2) T (LC): 105
p4a7501:(0:49:51.6) T: ***105?*** *that's very little,*
p4a7502:(0:49:55.4) ArCh: yes. The: dinner and and espectacle.
p4a7503:(0:49:59.6) T: ah OK OK! The ticket! OK! wow!

6.3.3. Comprehension Check.

Teacher comprehension checks were the most prominent teacher modification strategy, there were 320 instances found.

a) Procedural context

This context had the highest number of comprehension checks, 194. Most of the comprehension checks had a logistics function (129) followed by the technical function (65).

Most comprehension checks with a logistics function were found in instruction turns. This strategy was used to ensure that the students understood the instructions.

(0:19:43.0) JoDa (LC): k es tipus presentacio?
p3a5673:(0:19:46.7) T: yeah, the idea is that you go now, uhm, with your partner, ups! Yes, Jo, the idea is that now you go with your partner, with your classmate to the: to San Francisco, and you you take a look at these these things that I asked you to, ***you know?*** *look for two monuments, two activities that they can do, and all that. And take notes. And then when you come back after fifteen minutes, you have to present this information to the other group.*
p3a8589:(0:20:16.3) MaBe (LC): ok
p3a5675:(0:20:16.6) T: ***yeah? ok?***
p3a8590:(0:20:19.6) T (LC): ***ok****?*
p3a8591:(0:20:25.4) JoDa (LC): ok

In this example, JoDa makes a clarification request using his L1. The teacher explains the task they have to do and uses a comprehension check. MaBe confirms that she has understood the task, but JoDa is silent. The teacher repeats her comprehension check and then switches to the written channel and repeats her comprehension check for the third time. JoDa finally confirms that he has understood in the following turn.

However, most of the comprehension checks consisted of one word 'ok?' and were often in the middle of a long instruction turn. Thus, when the comprehension check was in the middle of a long turn, students were not expected to confirm the comprehension check as the comprehension check acted as a filler.

> *p2a8118:(0:08:04) T: OK so we have uhm Ruth, Maia, Vicky, Beatles. And Keisha, Jo, To and the other Ruth, schizophrenia. Perfect. OK so uhm what we're going to do is we're going to do a little bit of uhm autonomous work because since since I'm only one person, what I'm going to do is I'm going to be for a while with one group and then I'm going to go to visit the other group.* ***OK?*** *so uhm for some time you are going to have to be working alone. So it's very important that you understand what what we are going to do,* ***yeah?.*** *You have the whole class now, to prepare for this itinerary. What I would like you to do is just uhm walk around, the museum, or the house, whatever you have, walk around, to find out what is interesting. OK? select some interesting things, and then I would like you to write a notecard, uhm in your groups, one notecard per group,*
> *p2a8119:(0:08:57.2) T (LC): write notecard*

In this example, the teacher is giving instructions for the next task. The teacher's turn is very long and the teacher uses comprehension checks in the middle of the turn, however, she keeps the floor and does not provide space for the students to confirm.

However, when the comprehension check was at the end of the turn, students were given space and expected to confirm understanding. The following example is the second part of the instructions from the previous example:

> *p2a2405:(0:08:57.8) T: preparing this iti this itinerary a little bit like writing a little paragraph for example, I don't know when you come in on your left you can see a very interesting uh poster from the Beatles of their first concert, you know? a little bit of what you would say because what you are going to do next week, ups! my microphone sorry. so basically preparing in your notecard what you would say because next week what you are going to do is you are going to be the tour guides of the rest of the class. so for example next*

week Jo uh: To and everybody is going to show the schizophrenia, museum and then Maia, Viki and Ru are going to show us the the beatles museum. so I'm going to give you some time today, well the whole class, the whole hour, to prepare for this. ***is that clear?***
p2a2406:(0:09:47.5) MaBe: yes!
p2a2407:(0:09:47.9) ***T: yes?***
p2a2408:(0:09:48.8) RuDo: yes

This example shows the second part of the instructions. She marks the end of the instructions with a comprehension check at the end, to which MaBe answers affirmatively. She repeats her comprehension check to ensure that the whole class understands and gets another positive confirmation.

There were also 65 instances of technical comprehension checks. The technical checks were related to:

- Sound issues.

p4a7240:(0:11:14.3) JoDa: ???? the microphone
p4a7241:(0:11:18.5) T: uh! maybe, Jo, can you try to make your voice: uh: softer maybe?
p4a7242:(0:11:26.6) JoDa: what? what?
*p4a7243:(0:11:27.7) T: can you try to make your voice softer? =****you know?=***
p4a7244:(0:11:35.0) JoDa: =I don't understand=
p4a7245:(0:11:35.4) T: yes, uhm, wait.
p4a9188:(0:11:42.3) T (LC): can you make your vocie lower?
p4a9189:(0:11:51.7) JoDa (LC): ok

In this example, JoDa is having problems with his microphone. The teacher makes a suggestion and the student, who does not understand, uses a repetition request. The teacher repeats her suggestion and ends with a comprehension check. The student then overtly indicates non-comprehension and the teacher then reformulates her question, As a result, the student confirms that he has understood with an acknowledgement marker.

- Issues related to the management of the *Second Life* interface.

p6a2929:(0:10:29.9) T(LC): ok, to turn off the music
p6a2930:(0:10:46.9) T(LC): on the upper right hand side of the window
p6a2931:(0:10:49.8) T (LC): next to the time
p6a2932:(0:10:59.3) T (LC): you have a player, you can press stop
p6a2933:(0:11:01.6) T (LC): or pause

p6a2935:(0:11:06.7) T: ***OK girls?***
p6a2936:(0:11:09.2) NoLe: OK

In this example, the teacher is showing the students how to turn off the environment music. After the instructions, she engages in a comprehension check, to ensure that the students have understood the instructions.

- Interacting with objects in SL.

p7a8190:(0:19:17.2) T (LC): double click or right click and wear
p7a2496:(0:19:18.3) T: eh then you wear it let's see, no you don't have it on though.
p7a8192:(0:19:26.3) JoDa (LC): yes when i do it there a 'propiedades del iten del inventario
*p7a2498:(0:19:28.9) T: mmm no that means that uh... if it says propiedades it means that you are right clicking. No right click, normal click****, yeah?*** *Normal double click.*
p7a8193:(0:19:38.6) T (LC): normal

Here the teacher is giving instructions on how to wear an object. JoDa's object does not appear and he asks for help. The teacher tells him what he needs to do and ends with a comprehension check.

b) Fluency context

The fluency context was the second context to register the highest number of comprehension checks, there were 89, half of which had a task function and the other half had a logistics function.

Most of the comprehension checks with a task function happened during the discussion activities at the beginning or end of the class. However, as in the procedural context, these comprehension checks often were superficial and functioned more as fillers than checking for actual comprehension.

p10a3904:(0:55:33.2) T: ok uhm the second group, can you tell us very briefly what this museum consists of?
p10a3914:(0:56:15.6) JoDa (LC): well it consists about the skhezophrenia feeling
p10a3916:(0:56:18.9) T: yes, exactly. Yeah, this is ah: something that a university...
*p10a9580:(0:56:32) T: Yeah, this is something that the university sets up to: to teach their students****, you know?*** *a little bit about this uh: this feeling, but the nice thing is that it's a:...*

p10a3919:(0:56:56.8) JoDa (LC): it simulates the voices that hear the people that have skhezophrenia
p10a3920 (0:57:01.2) T: Exactly. As Ne says, it's very annoying, ***you know****? it bothers you a lot, but that's the idea, yeah? to to experience that*
p10a3921 (0:57:11.0) KeHu (LC): yes

In the example above, the teacher asks a group to report to the rest of the class on the museum that they visited. JoDa gives a brief answer and the teacher then expands JoDa's response using a comprehension check in the middle of her turn, which functioned as a filler. JoDa adds a new idea and the teacher agrees with him and again elaborates on the answer using the same comprehension check, to which KeHu agrees.

p11a9253:(1:04:29) T: OK good! Uhm question for all, before leaving, question for all. Uhm do you think they were-- were there good recreations of real life?
p11a9054:(1:04:41.1) T (LC): good recreations?
p11a6321:(1:04:43.3) T: ***you know****? is it a good idea uhm if somebody can't visit uhm Paris or San Francisco, to visit it in Second Life and to see the main tourist attractions?*
p11a9055:(1:04:52.6) MeBa (LC): yes

In this example, the teacher asked a question and after a silence she used a comprehension check that acted as a cue to introduce a reformulation of her question.

There were only 16 comprehension checks with a logistics function and most of them were used to provide help during the performance of a task.

p4a5222:(0:23:38.3) ArCh: yes. Ah: ??? ah the second floor is very colorful. Ah: there are not a lot of things but we can find a blue carpet with a yellow submarine and a poster with the Beatles and the famous words or song
*p4a5224:(0:24:06.4) T: OK, Ar, just more in general. Just present the museum and then we can go inside, yeah? Welcome to the Beatles museum****, you know?*** *and then we can go inside-*
p4a5225:(0:24:19.1) ArCh: welcome to the Beatles museum
p4a5226:(0:24:22.2) T: mhm

In the example above, ArCh has started her guided tour of the Beatles museum whithout entering the house. The teacher interrupts Ar to give her some guidelines on how to carry out the tour and adds a comprehension check towards the end. ArCh does not confirm her understanding, but changes her approach to the tour, showing understanding.

c) Task-oriented

Almost half of the comprehension checks in the task-oriented context had a logistical function, 26 out of 56. Comprehension checks with this function were used when the teacher was giving help during group work. The nature of the help was related to:

- Summarizing or reformulating instructions.

> *2a8274:(0:38:38) T (LC): you should start writing that notecard*
> *p2a8275:(0:38:44) KeHu (LC): bu*
> *p2a8277:(0:38:51.9) KH (LC): what we have to write in this note?*
> *p2a2662:(0:38:54.6) T: what do you have to write? uhm a little bit, uhm what you are going to show the: students next week?* ***OK?*** *you are going to do a little guided tour like what I did last week, shorter.* ***OK?*** *but what uh what is interesting to to show. have you seen the: the mirror? in the bathroom?*
> *p2a2663:(0:39:24.3) ToSp: yes*

In this example, the teacher reminds the group that they have to take notes while they are exploring their museum. KeHu asks the teacher what they have to write about so the teacher summarizes the instructions she gave before starting the task and uses two comprehension checks. ToSp, another member of the group, confirms that he has understood.

- Dealing with logistical issues like time management.

In the example below, the teacher is telling the group to start writing their notecard after they visit the last location and the teacher uses a comprehension check to check for understanding and get confirmation from the students.

> *p2a8720:(0:28:54) T: OK let me show you: uhm one last place, it's next door to this building, and then if you want you can start to to write a little bit your your itinerary,* ***Ok?*** *for for the guided tour, for next week?*
> *p2a2596:(0:29:08.9) ElMc: OK*

In the following example the teacher also indicates that the group should finish the exploration stage and start writing their notecard.

> *p2a2674:(0:41:23.3) T: OK uhm now is when you have to work together* ***yeah?*** *decide what you are going to write in that notecard.*

The other prominent function in this context was the task function, there were 16 comprehension checks found with this function. The teacher used comprehension checks with a task function when helping students work on the content of the tasks.

> *p2a2583:(0:27:51.2) T: uhm yes there's a... does anybody know that they did a famous concert once on a roof? there's a very famous concert of the Beatles that the they did a: on the street?* ***you know?*** *well on the roof of a house the Simpsons has a: has an episode. did you know this or or not?*
> *p2a8226:(0:28:14.2) MaBe (LC): i dont know*
> *p2a2585:(0:28:14.8) ElMc: no I don't know*
> *p2a2586:(0:28:15.1) RuDo: no they played here? in the roof?*
> *p2a2587:(0:28:16.0) T: yeah they played in the roof. so this is a recreation of a: of this moment, of this famous concert that they did.*
> *p2a2588:(0:28:23.9) RuDo: ah:!*
> *p2a8227:(0:28:24) ElMc: OK!*
> *p2a2589:(0:28:27.2) T: so you can talk a little bit about this,* ***ok?*** *you have uhm you see? all the instruments for a concert the drums, the piano,....*
> *p2a8228:(0:28:36.2) RuDo (LC): yees*

In this example, the group is preparing their guided tour of the Beatles House. The group is now on a roof, that shows a replica of the Beatles' rooftop concert. The teacher asks them if they know about the concert using a comprehension check. The students state that they do not know and the teacher tells them about the concert. The teacher then tells them that they can include this piece of information in their tours, and again adds a comprehension check. RuDo confirms the teacher's comprehension check.

6.3.3.1. Comprehension checks and activities.

There were few comprehension checks found in both tasks.

Table 37

Teacher comprehension checks during the discussion and the guided tour

T comp check	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion	8	8	0	5.6%
Tour	6	6	0	1.5%

During the discussion, the teacher used this strategy sometimes when asking the class questions to check if students understood the question.

> *p11a5987:(0:10:50.6) T: OK, cultural, because there are a lot of cultural things, and does it only attract uhm cultural tour-- you know, tourists that go there only for culture? or does it have any other: interest,* ***you know?*** *to go to Paris, is it famous for anything else? or only for its culture?*
> *p11a5988:(0:11:06.9) NoLe: romanticism*

In this example, the teacher is asking the students what kind of tourism Paris is famous for. A student before mentions culture, the teacher acknowledges her response and asks if there is any other type of tourism. She uses a comprehension check and then rephrases her question.

The guided tour registered few comprehension checks because the input was coming from the students. The few comprehension checks were used during the question stage at the end of the tour or for technical issues.

> *p7a7384:(0:29:17.3) JoDa: a Spanish mission, but ?? Golden Gate*
> *[...]*
> *p7a7392:(0:29:31.6) T: it could be, I'm not sure, I checked in uhm Wikipedia, so it's not very reliable, but it says that there's a bay that's called uhm the Golden Bay,* ***you know?***
> *p7a9263:(0:29:42.5) T (LC): Golden Bay*

Here, To has finished his tour of the Golden Gate and the group is discussing why it is called ‘golden’ when it is red. JoDa offers an answer, and then the teacher replies, using a comprehension check at the end.

6.3.4. Self Repetition.

Self-repetition was a popular teacher modification strategy. The teacher engaged in 333 instances of self-repetition. The teacher made use of the multi-channel nature of the environment when employing this strategy as 73% of the self-repetitions found in the data involved a channel switch.

a) Fluency classroom context

The fluency context registered the highest number of self-repetitions, 113 out of the 154 self-repetitions found in this context were task related, 72 had a task function, and 41 a form function.

Most instances of self-repetition in the fluency context that had a task function were used for modeling purposes. Furthermore, most of the instances of modeling with a task function had an oral to written channel switch (43 out of 72). The teacher used the text chat frequently to repeat what had been said through the audio channel to model lexical items.

The teacher used self-repetition and the written channel to:

- Acknowledge student answers and share them with the rest of the class.

p8a9520:(0:05:33) T: OK so here there's two pictures, to introduce the class I chose these two pictures, can you tell me what they represent? Like the first one? what can you see in the first one?
p8a3423:(0:06:03.5) MaBe (Vicky): =the Beatles!=
p8a3424:(0:06:04.4) T: exactly, the Beatles, uhu
p8a3425:(0:06:08.3) ***T (LC): the Beatles***

Here the teacher asks a question and MaBe answers through the audio channel. The teacher gives the student positive feedback and repeats the student's answer. Then, in the next turn the teacher repeats her last utterance and types it in the text chat.

- To type and model important words for the task.

p3a5538:(0:05:03.1) T: oh yeah! It's-- it has like a very: original shape, right? Mhm
p3a8534:(0:05:09.2) ***T (LC): original shape***
p3a5540:(0:05:09.8) T: it's an original shape. =Yeah=
p3a5541:(0:05:10.2) MaBe: =yes=

Here the group is discussing important monuments in Paris. A student is talking about Pompidur and the teacher asks the student if it has an original shape. In the next turn, she types the term and repeats it again through the voice chat to which MaBe agrees.

All of the self-repetitions with a form purpose were carried out through the text channel and had channel switches. The teacher always used the text chat to type in new words for the student, for modeling purposes. There were different modeling purposes found in the form-focused self repetitions:

- After a student appeal for help, to model words the student needed.

> *p3a5533:(0:04:37.2) T: Uhm can-- what is this monument? can you describe it a little bit?*
> *p3a5534:(0:04:44.2) MaBe: it's a museum, ehm it have a lot of 'tuberias'?*
> *p3a5535:(0:04:50.8) T: a lot of uh: tubes, aha*
> *p3a8533:(0:04:54.1)* ***T (LC): tubes***

In this example, the teacher is asking the student to describe Pompidur. She uses a word in her L1 in an interrogative tone. The teacher reformulates her utterance giving her the missing word and repeats the word in the text chat.

> *p11a6764:(0:28:01.1) KH: when I when I see the: balcon?*
> *p11a6765:(0:28:04.2) T: the balcony?*
> *p11a6766:(0:28:06.3) KH: eso*
> *p11a9081:(0:28:06.8)* ***T (LC): balcony***

In this example, a student is talking about Verona and Juliette's balcony. KH is not sure how to say 'balcony' and makes a guess using an interrogative tone. The teacher uses a confirmation check with the right word and KeHu agrees. The teacher types in the word in the text chat.

- To rephrase a student's utterance and repeat it through the text chat for modeling purposes.

> *p3a5600:(0:10:39.5) T: why why is it famous, do you know?*
> *p3a5601:(0:10:43.6) MaBe: eh: because have a lot of: curvas,*
> *p3a5602:(0:10:46.3) T: yes. It's the: curviest street in the world.*
> *p3a5603:(0:10:53.0) MaBe: yes*
> *p3a5604:(0:10:53.6) T: it's incredible.*
> *p3a8558:(0:10:53.9)* ***T (LC): it's the curviest street in the world***

In this example, the teacher asks why Lombard Street is famous and the MaBe responds in her L1. The teacher reformulates the student's answer and then repeats the recast in the text chat.

b) Procedural context

The second context with the highest number of self-repetitions was the procedural context, which registered 131 instances. Most of the self-repetitions in this context had a technical function, 97.

Out of the 97 technical self-repetitions, 67 had oral to written channel switches. This occurred mostly when there were sound problems.

p2a7942:(0:12:9) T: can you hear me, Pa?
p2a7902:(0:12:18.4) MaBe (LC): hello??
p2a106:(0:12:20.2) ***T: Pa? Can you hear me?***
p2a7903:(0:12:29.2) ***T (LC): can you hear me?***
p2a108:(0:12:34.3) ElMc: no she can't!
p2a109:(0:12:36.9) T: ah: can can the rest of you hear me?
p2a7904:(0:12:38.3) MaBe (LC): et sento fatal

In the example above, the teacher makes a channel check using the audio channel, but gets no confirmation. By repeating the channel check using the text channel she can see if the student was having technical problems, like in this case.

Self-repetitions were also used to repeat instructions regarding the use of the *Second Life* environment:

p2a2443:(0:14:24.0) T: OK this museum has some special effects, [echo] you are going to hear voices. so uhm in order to hear these voices, you have to put something on, put a badge on. It's like a like a a: a pin on your sweater. so to do this, do you see this re yellow: cylinder? you have to click on it, and select guardar.
p2a8713:(0:14:56) T: and now you have to look for it in your inventory. [2] OK? Go to items recientes,
p2a8148:(0:15:03.6) ***T (LC): items recientes***
p2a8149:(0:15:04) T: and then uhm: double click on it,
p2a8151:(0:15:21.5) KeHu (LC): eing?
p2a8152:(0:15:27.7) ***T (LC): click on the yellow cylinder***
p2a8153:(0:15:31.5) ***T (LC): and select 'guardar'***

p2a8154:(0:15:39.6) ***T (LC): then open your inventory***
p2a8155:(0:15:40.3) KeHu (LC): a okei
p2a8156:(0:15:42.1) ***T (LC): go to items recientes***
p2a8158:(0:15:51.8) T (LC): and double click on the hallucinations badge

In this example, the teacher is showing the group how to put on a badge in *Second Life*. She first gives all the instructions in one turn through the voice channel and then repeats the instructions in steps through the text channel, beginning a new text turn for each step.

There were also 31 self-repetitions found with logistic functions. This strategy was used for:

- Group formation. The teacher used the text chat when forming groups for an activity to repeat who was in each group.

p3a8573:(0:14:43) T: OK, good! Well uhm, we're going to get into two groups, and each group is going to go to a different city, yeah? I want two people to go to Paris and two people to go to go to San Francisco. Uhm who would like to go where? Do you have any preferences?
p3a5645:(0:15:05.3) MaBe: no
p3a5646:(0:15:07.1) JoDa: no
p3a5647:(0:15:15.8) T: no?
p3a5648:(0:15:20.5) JoDa: San Francisco?
p3a5649:(0:15:21.6) T: OK. Uh: Jo will go to San Francisco, anybody else wants to go to San Francisco?
p3a5650:(0:15:29.8) MaBe: I
p3a5652:(0:15:30.5) T: OK
p3a5653:(0:15:31.9) RD: Paris
p3a5654:(0:15:34.1) T: and Ru said Paris? Is that Ru? Who said Paris? Ru o Pa? I'm not sure
p3a8575:(0:15:44.3) MaBe (LC): paris
p3a5656:(0:15:44.9) RuDo: I. Both.
p3a5657:(0:15:46.7) T: [laughs] OK. So we'll have Jo and Ma, San Francisco
p3a8576:(0:15:50.3) ***T (LC): st: joi, ma***
p3a5659:(0:15:51.7) T: oh, that's SF and Paris uh: Ru and and Pa
p3a8579:(0:15:58.9) ***T (LC): paris: ru, pa***

In this example, students have to decide if they want to prepare a guided tour of Paris or of San Francisco. When students have decided, the teacher uses the text chat to repeat the groups that she has outlined previously in the audio channel, for clarification purposes.

- To summarize student contributions, when someone had sound problems.

p4a7384:(0:29:17.3) JoDa: a Spanish mission, but ?? Golden Gate
p4a9259:(0:29:19.0) ArCh (LC): jo talk with chaat opkeasee
p4a7386:(0:29:21.7) JoDa: says Golden Gate
p4a9262:(0:29:22.2) ArCh (LC): please
p4a7388:(0:29:25.1) ***T: ah! Spanish mission***
p4a9261:(0:29:25.6) ***T (LC): spanish mission***
p4a7390:(0:29:27.4) ***T: called the Golden Gate, mhm***
p4a9260:(0:29:31.5) ***T (LC): called the Golden Gate***

In this case, the teacher is typing out what the student says because he has microphone problems and the rest of the group cannot hear him well, as can be seen in turn 2.

c) Task-oriented context

There were 40 self-repetitions in this context, 26 of which were carried out through the text channel.

There were 11 self-repetitions with a task function and they were used to ask the students questions related to the task, self-repetitions were usually triggered by student silence or repetition requests.

p2a2572:(0:26:38.5) T: OK girls! well this is the roof, of the: of this house, do you know what it has to do with the Beatles?
p2a2573:(0:27:02.0) ***T: do you know what it has to do with the Beatles? this this roof?***
p2a2574:(0:27:11.8) RuDo: sorry?
p2a8223:(0:27:12.1) MaBe (LC): what?
p2a2576:(0:27:12.4) ***T: uhm do you know what it has to do with the Beatles? the this roof?***

In this example, the teacher asks the group a question about the Beatles house. After 24 seconds of silence, the teacher repeats her question. Then two students engage in a repetition request and the teacher repeats her question again.

There were also eleven self-repetitions with a form function. All of them occurred through the text chat and were used to model important words for the task.

p2a2736:(0:49:50.8) RuDo: how do you say hippy in English?
p2a2737:(0:49:52.9) T: hippy is an English word

p2a2738:(0:49:55.1) MaBe: hippy!
p2a2739:(0:49:55.3) T: [laughs]
p2a2741:(0:49:57.4) T: it's an English word
p2a2742:(0:49:57.8) MaBe: hippy! es igual!
p2a8305:(0:49:58.3) ***T (LC): hippie***
p2a2744:(0:49:59.4) MaBe: it's the same
p2a2745:(0:50:00.9) RuDo: ok ok

In this example RuDo asks the teacher how to say a word in English. The teacher and her classmate give her the answer and they the teacher models the word in the text chat for the students.

Finally, this context had eleven self-repetitions with a logistics function. Here, the teacher used self-repetitions to write key instructions in tasks that she wanted the students to remember.

p5a5777:(0:35:09.2) T: so when you're finished with the Golden Gate, go visit Lombard street or another tourist attraction. ok? Remember, the idea is, talk about two: tourist attractions,
p5a8661:(0:35:22.2) ***T (LC): 2 tourist attractions***
p5a5779:(0:35:22.4) T: uhm houses in Lombard street,
p5a8662:(0:35:27.5) ***T (LC): houses in lombard***
p5a5781:(0:35:28.0) T: a:nd something that a tourist can do. In San Francisco.
p5a8663:(0:35:36.4) ***T (LC): sth that a tourist can do in san francisco***

In this example, the teacher is summarizing what JoDa has to do in San Francisco and then switches to the text channel to type the important ideas she wants JoDa to remember.

6.3.4.1. Self-repetition and activity.

There were self-repetitions found in both tasks in a similar number.

Table 38

Teacher self repetitions during the discussion activity and the guided tour

T self repet	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion	20	8	12	14.1%
Tour	25	6	19	6.4%

13 out of the 20 instances of self-repetion in the discussion activity took place through the text chat. The self-repetitions through the text chat were used for modeling or for corrective feedback.

p5a5550:(0:05:43.4) T: ah:! yes, what do you like about the: the pyramid, Jo?
p5a8539:(0:05:58.8) JoDa (LC): it's a very tall glass pyramid
p5a5553:(0:06:18.9) T: yeah, it's a tall glass pyramid, and what can you see inside? if you look-- if you look at the pyramids from the outside? what can you see? inside?
p5a8540:(0:06:47.3) JoDa (LC): and other pyramid but 'alreves'
p5a5555:(0:06:55.6) T: ah exactly, another pyramid, yeah, but ***upside down****. Yeah, it's very original.*
p5a8541:(0:06:59.8) T (LC): ***upside down***

In this example, Jo is talking about the pyramids outside the Louvre Museum and when he describes them, he uses a word in his L1. The teacher recasts his utterance and then models the word he was missing in the text chat.

The other self-repetitions were used to repeat questions when there was no response or there was a technical problem.

p11a8845:(0:14:15) T: ***what i-- what I'm a showing you in this picture?***
p11a6026:(0:14:26.3) NoLe: hello?
p11a6027:(0:14:28.4) T: hello. ***What am I showing you in this picture?***
p11a6028:(0:14:33.5) NoLe: I don't listen you.
p11a6029:(0:14:34.2) T: ah! sorry!
*p11a8846:(0:14:38.5****) T (LC): what can you see in this picture?***
p11a6031:(0:14:42.5) NoLe: the bridge bridge

In this example, the teacher asks the students about a picture. NoLe starts a channel check and the teacher acknowledges the channel check and moves back to the task by repeating her question. NoLe indicates that she cannot hear so the teacher repeats her question through the text channel.

During the guided tour, self-repetitions had the same uses as during the discussion activity.

6.3.5. Self-Reformulation.

This strategy was used less frequently than self-repetitions, self-reformulations were found on 52 occasions.

a) Fluency context

The fluency context accounted for 37 out of the 52 self-reformulations found in the data. There were 21 instances with a task function. This strategy was triggered mainly by student repetition requests (9) and student silence (12).

> *3a5557:(0:07:01.9) T: Let's see, this question is for everybody. What makes Paris uhm so famous? You know? It's one of the top cities to visit. It has a lot of tourists every year. Why do you think everybody wants to visit Paris?*
> *p3a8542:(0:07:24.5)* ***T (LC): what makes Paris a popular destination?***
> *p3a5559:(0:07:24.8) MaBe: it's the city of eh: the love*

In this example, the teacher asks the class a question about Paris. She waits 23 seconds for an answer. As there is no answer, she switches to the text channel and rephrases her question to simplify it. MaBe then, offers and answer.

b) Procedural context

The teacher engaged in ten self-refomulations in the procedural context, seven had a logistics nature and three had a technical nature.

Self-reformulations with a logistics function were used to rephrase instructions and for time management.

> *p5a5816:(0:41:49.6) T: OK, girls, uhm, we're running out of time, we only have five five minutes. So, uh, if you want just, ups! there's a lot of echo. Just describe the Arc de Triomf a little bit, you don't need any technical information, yeah? what you can see, and then if you want, just uh take a look at... I don't know, make some suggestions about what people can do in Paris, in their free time, you know? any leisure options? and if you want to describe the buildings a little, yeah? I'll call you in 5 minutes, OK? Let me give you this, maybe it can help you.*
> *p5a5818:(0:42:35.0) T: OK? these are uhm some expressions that you can use for your presentation.*
> *p5a5822:(0:43:05.8) RuDo: sorry I I don't understand you.*
> *p5a5823:(0:43:08.7)* ***T: yes uhm in 5 minutes we have to go back to to uhm the island for the presnetations because we're running out of time.***

p5a8676:(0:43:14.0) MaBe (LC): okkk
p5a5825:(0:43:15.0) ***T: so, if you don't have time to finish it, don't worry, yeah? but I'm giving you the worksheet, just to give you some expressions ehm for your presentation, yeah? in five minutes?***
p5a8677:(0:43:25.8) RuDo (LC): okk

In the example above, the teacher is reminding the group of what they have to do and reminding them of the time they have left. RuDo indicates non-understanding, so the teacher rephrases her message and simplifies it.

There were three self-refomulations of a technical nature.

p2a7933:(0:07:00) T: to take the elevator you have to click on the: upper arrow. yeah? this green arrow? just click on it, and I think it says... it will take you up.
p2a7934:(0:07:19) T: Ma, can you do it?
p2a63:(0:07:23.9) ***MaCh: eh: can you repeat? please?***
p2a64:(0:07:24.7) ***T: yeah click on the: upper arrow. careful because you may fly so you'll have to: better to stop flying.***

Here the teacher is giving instructions on how to use an elevator in *Second Life*. MaCh asks for repetition and the teacher rephrases her instructions and simplifies them. The teacher tended to simplify her discourse in self-reformulations after a repetition request.

6.3.5.1. Self-reformulation and activity.

There were few teacher self-reformulations in both activities, as can be seen in Table 39.

Table 39
Teacher self-reformulations during discussion activity and guided tour

Self-reformulation	Total T occurrences	Occurrences in voice utterances	Occurrences in text turns	% total T turns
Discussion	5	2	3	3.5%
Tour	7	7	0	1.8%

In the example below, the group is discussing different places in Paris. NoLe mentions Versailles and the teacher acknowledges her answer and asks her what she likes about Versailles. NoLe says that she has never visited the palace. The teacher then recasts her non-target like utterance through the voice channel and reformulates her question to simplify it.

p11a5998:(0:12:02.8) NoLe: I I think Versailles?
p11a5999:(0:12:05.9) T: aha, wha what do you like about Versalles?
p11a6000:(0:12:12.0) NoLe: I I don't stay here, eh?
p11a6001:(0:12:13.7) T: ah you have you haven't been there. ***But why do you like uh Versalles?***
p11a6002:(0:12:19.6) NoLe: well I I don't like it a lot because it's very Rococo,

In both activities, teacher self-reformulations were used to simplify the teacher's questions and aid student comprehension.

6.3.6. Overall teacher modifications.

The teacher modifications that had the most significant presence in the whole data were self-repetitions and comprehension checks, followed by confirmation checks.

Table 40

Overall teacher modifications

T modification	Number of occurences	% of all teacher modifications	% of all the T turns
Clarification requests	21	2.3%	0.8%
Confirmation checks	161	18.1%	6.2%
Comprehension checks	320	36%	12.3%
Self-repetition	333	37.3%	12.8%
Self-reformulation	52	5.8%	72%

Self-repetitions were a very present strategy in the *Second Life* environment as many of them were done through a channel switch, mostly from the oral channel to the written channel. By switching to the written channel, the teacher could ensure that the message was being received by everyone if there was a technical problem, and the teacher could also use the text chat to model or correct forms as well as for backtracking purposes.

The teacher used comprehension checks frequently as a backchanneling strategy, to keep the communication channel open and check for student undertanding and confirmation due to the lack of non-verbal signals.

6.3.6.1. Overall teacher modifications in two activities.

a) Discussion activity

The teacher used several strategies to modify her discourse during the discussion task. The most popular strategy was self-repetition, which accounted for almost half of the teacher modifications in the discussion task. In half of the self-repetitions the teacher made use of channel switches, using the multi-channel feature the virtual world offered as an aid in communication. At a lower rate, the second most popular strategy was comprehension checks, followed by confirmation checks, self-reformulations and clarification requests.

Table 41

Overall teacher modifications in the discussion activity

Strategy	Number of occurrences	% transactional strategies	% of T turns during disc act
Clarification requests	4	8%	2.8%
Confirmation checks	7	14%	4.9%
Comprehension checks	12	24%	8.4%
Self-repetition	21	42%	14.7%
Self-reformulation	6	12%	4.2%

b) Guided tour

The most popular strategy during the guided tour tasks was also self-repetition, but the percentage was lower, it accounted for less than half of the teacher modification strategies. It was followed by comprehension checks and confirmation checks (see Table 42).

Table 42

Overall teacher modifications in the guided tour

Strategy	Number of occurrences	% transactional strategies	% of T turns during guided tour
Clarification requests	4	4.8%	1%
Confirmation checks	21	25.3%	5.4%
Comprehension checks	25	30.1%	6.4%
Self-repetition	26	31.3%	6.6%
Self-reformulation	7	8.4%	1.8%

6.4. Corrective Feedback

This section describes the corrective feedback strategies found in the data. All of the strategies found were implicit forms of repair. The following section analyzes clarification requests, confirmation checks, total and partial recasts and self-repair.

6.4.1. Clarification Requests.

Students' non-target-like utterances triggered few clarification requests from the teacher, there were only five found throughout the data. The errors that received attention were lexical (1), typographical (1), use of L1 (1) and grammatical (2).

p8a3466:(0:08:47.4) T: yeah liberty, freedom... what about the colors?
p8a3467:(0:08:57.7) KeHu (LC): gay
p8a3468:(0:08:58.8) T: [laughs] OK yeah, a little bit gay, the rainbow,
p8a3470:(0:09:02.8) KeHu (LC): flat
p8a9815:(0:9:04) T: Flat? ***What do you mean flat?***
p8a3472:(0:09:11.8) KeHu (LC): flag
p8a3473:(0:09:14.2) KeHu (LC): sorry
p8a3474:(0:09:18.1) T: oh the gay fat, the: the gay flag,

In this example, students are brainstorming words that come to their mind when they see a Beatles picture. KeHu answers through the text chat and makes a non-target like utterance. The teacher does not understand, repeats KeHu's answer and then engages in a confirmation check and a clarification request. KeHu realizes that she has made a typographical mistake, retypes her answer and apologizes through the text chat.

Students responded to the corrective feedback in three out of the five instances. In one instance, the student clarified in her L1 while the other two instances had no apparent student reaction. All the clarification requests were made through the oral channel and there were student reactions found in both the oral and the written channel.

6.4.1.1. Clarification requests and tasks.

There were very few clarification requests used as corrective feedback, there were only six instances found in the whole data. There were no instances found in the discussion task and there were two instances found in the guided tour task.

One was caused by a technical problem triggered by a non-target-like use of a verb, and it triggered no reaction. The second one was an utterance delivered in the student's L1. When the teacher asked for clarification, the student clarified in her L1.

p6a6960:(0:46:28.6) KH: Cristina, a mi això no em fa cas
p6a6961:(0:46:33.8) T: sorry? your avatar...?
p6a6962:(0:46:34.6) KH: [laughs] que no me hace caso

In this example, KeHu is having technical problems. She asks for help in one of her L1s, Catalan. The teacher then engages in a clarification request to prompt the student to use English. However, instead of clarifying in the target language, she switches to her other L1, Spanish.

6.4.2. Confirmation checks.

There were only four confirmation checks used as corrective feedback, all of them were carried out through the audio channel. They were triggered by grammatical (2), typographical (1), lexical (1) non-target-like utterances. The four confirmation checks triggered different student reactions: acknowledgement (1), correction (1) and incorporation (2). This high student response rate may be because it is a negotiation strategy and the teacher expected a response from the student.

p8a3967:(1:00:22.0) RuHa (LC): i don't can clouse the museum!!!!
*p8a3968:(1:00:29.7) T****: you you can't close the museum?*** *I don't understand Ruth.* ***You mean that museums don't close in SL?***

In this example, the class is discussing differences between museums in real life and museums in *Second Life*. A student makes a non-target-like utterance that the teacher does not understand. The teacher then engages in a confirmation chek to try to guess what RuHa means. However, RuHa does not respond.

6.4.2.1. Confirmation checks and tasks.

There were no instances of confirmation checks found in the data.

6.4.3. Total recasts.

Total recasts were the most popular corrective feedback strategy. Out of the 43 recasts found, 32 triggered no apparent student reaction, 7 were acknowledged by the student and 4 resulted in incorporation of the feedback into the learner's output. The recasts were triggered by grammatical (20), lexical (10) and L1 (14) non-target-like utterances.

11 out of 41 of the recasts were bimodal, which means that the teacher used both the audio and the text medium for the recast.

p8a3537:(0:13:29.8) MaBe (LC): existencial
p8a3541:(0:13:35.9) T: existential anguish, yeah, it's difficult, mhm
*p8a3542:(0:13:40.2****) T (LC): existential anguish***
p8a3544:(0:13:44.0) MaBe (LC): yes

In this example, students are reacting to a picture that the teacher is showing them. MaBe uses the word 'existencial' in her L1 to describe the painting. This lexical non-target-like utterance triggers a teacher recast through the voice channel. The teacher then models the expression in the text chat. Thus, the teacher uses both the oral and the text channel for the recast. MeBa acknowledges the recast.

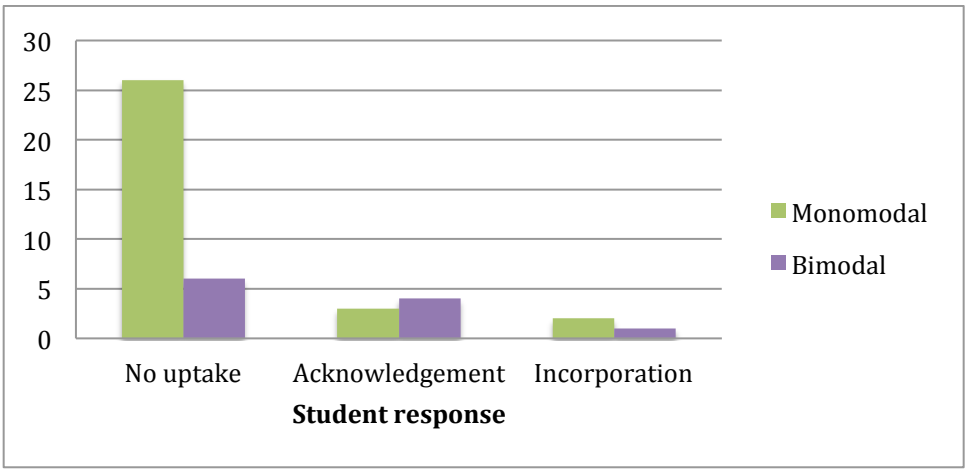


Figure 20. Overview of the channels used in the recasts and the student reaction

In figure 20 we can observe that most recasts that were acknowledged by the students were bimodal. We can also observe that almost half of the bimodal recasts resulted in a student response. The presence of the text chat may have not been that predominant due to the fact that the recast was incorporated into the teacher's turn, and the teacher mainly used the audio channel as the main means of communication.

6.4.3.1. Recasts and tasks

There were few teacher recasts found in both tasks. During the discussion task, half of the recasts were followed by a self-repetition in the text channel. These recasts triggered no student response.

Table 43

Overview of recasts during discussion and guided tour

T recasts	Total T occurrences	Occurrences in voice turns	Occurrences in text turns	% total T disc turns
Discussion	10	2	3	7%
Tour	4	7	0	1%

p11a6046:(0:15:28.0) T: Can you tell us a little bit-- oh, you'll be there next summer? great! It's beautiful! La, could you recommend Ar places to visit in San Francisco that are-- you know? what is San Francisco-- what is interesting in San Francisco to see? There's a lot of things, eh? but...

p11a8855:(0:16:06.3) LaAd (LC): i weere only one day
p11a6048:(0:16:08.5) T: oh, ***you were only one day****! what did you visit? ups! you were o-- uy! what did you visit?*
p11a8856:(0:16:14.7) LaAd (LC): and i saw not many things

In the example above, La is telling the teacher about her personal experience in San Francisco. She types a non-target-like turn and the teacher recasts her output and moves the conversation forward with a follow-up question. However, La does not acknowledge the recast.

During the guided tour task, only one recast had a self-repetition in the text channel. Although there were fewer recasts here, two out of four triggered an acknowledgement from the student.

p6a9325:(0:37:50) NoLe: go to this prison and is more and was more difficult eh: go out of here. of the...
p6a6864:(0:37:59.1) T: ***mhm, it was difficult to get out, to escape, right?***
p6a6865:(0:38:04.9) NoLe: yes, to escape.
p6a6866:(0:38:05.9) T: mhm
p6a6867:(0:38:07.3) T (LC): it was difficult to escape

In this example No is talking about Alcatraz but is struggling with what she wants to say. The teacher then reformulates her utterance and ends with a confirmation check. NoLe acknowledges the recast and repeats it. The teacher then types the sentence in the text chat to model it for NoLe.

6.4.4. Partial recast.

This was the second most frequent corrective feedback category and it was triggered both by lexical and grammatical non-target like forms. However, the incorporation rate was low, out of the 32 partial recasts, 18 had no student reaction, 7 were acknowledged and 8 were incorporated into later turns. The corrections were triggered by grammatical (7), lexical (15), and L1 (10) non-target-like utterances.

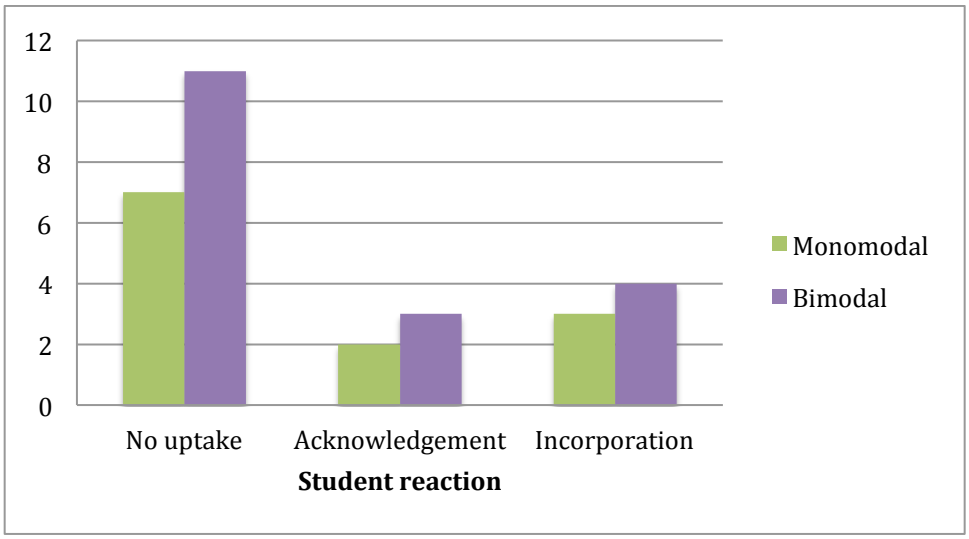


Figure 21. Types of partial recasts according to the channel and student reaction

Figure 21 shows that bimodal instances of student acknowledgement or incorporation were more frequent than monomodal instances. Contrasting with the preferred mode for total recasts, partial recasts displayed a balanced use of the oral and the text channel. Not only was bimodal correction more frequent than monomodal correction, but also half of the monomodal instances used the text chat as the only channel for corrective feedback.

> *p5a7658:(0:17:22.9) MaBe: well, in front of you eh: you can see the cathedral of Notre Damme. Is loca-- is localated in the: fourth district in one of the oldest French cathedrals in Gothic style.23*
> ***p5a9213:(0:17:39.4) T (LC): located***
> *p5a7660:(0:17:40.5) T: mhm*

In this example, MaBe is delivering her guided tour and makes a mistake when using a verb. The teacher here only uses one channel, she uses the text chat to provide corrective feedback so as not to interrupt her presentation. However, MaBe does not acknowledge the correction.

6.4.4.1. Partial recasts and tasks.

There were a few instances of partial recasts found in both tasks. Again, partial recasts had a higher density during the discussion activity.

Table 44

Number of partial recasts in the discussion and the tour

Partial recast	Total T turns	Occurrences in voice turns	Occurrences in text turns	% total T turns
Discussion	6	4	2	4.2%
Tour	7	2	5	1.8%

In the following example, MaBe is describing a museum to the teacher. She makes two non-target like utterances: she omits the third person ‘s’ in the verb and she uses a word in her L1. The teacher just focuses on her L1 word and emits a partial recast translating the word and then types it in the text chat to model it.

p5a5534:(0:04:44.2) MaBe: it's a museum, ehm it have a lot of 'tuberias'?
p5a5535:(0:04:50.8) T: ***a lot of uh: tubes, aha***
p5a8533:(0:04:54.1) T (LC): tubes

Partial recasts were used to provide brief unobtrusive feedback during the guided tour.

p8a7661:(0:17:41.9) MaBe: eh: was began in 1163 and was finished in 1345. It is dedicated to Mary, the mother of Jesus.
p8a9214:(0:17:52.3) ***T (LC): it was finished***
p8a7663:(0:17:54.0) T: mhm

In this example, Ma is delivering a tour of Paris and the teacher uses the text chat to provide corrective feedback without interrupting the flow of the presentation, however, it is not acknowledged by the student.

During the discussion task many of the recasts were bimodal, the teacher used the oral channel and then repeated the recast through the text channel, or the recasts were carried out solely through the voice chat. In the guided tour, however, three out of seven recasts only employed the text channel, thus making the recast more unobtrusive.

6.4.5. Student self-repair.

There were 15 instances of student-self repair. However, most of them were repairs in the text chat concerning spelling or typographic errors (13). Some of these self-corrections in the chat were found to have an asterisk, to indicate that it was a correction.

p8a3851:(0:48:36.0) KeHu (LC): do you se something?
*p8a3852:(0:48:39.9) KeHu (LC): see**

However, two instances were found in which the student used their L1 and then self-corrected and translated the utterance into the target language. There were no instances found of peer repair.

6.4.6. Trigger and student response for corrective feedback.

Corrective feedback was mostly triggered by grammatical non-target-like utterances, followed closely by lexical and L1 utterances.

Table 45.
Types of triggers for corrective feedback

	Lexical	**Grammatical**	**Spelling**	**L1**	**TOTAL**
Clarif req	1	2	1	1	5
Conf check	1	2	1		4
Recasts	10	**20**		14	44
Partial recast	**15**	7		10	32
TOTAL	27	31	2	25	85

It can also be observed the total recasts were triggered mostly be grammatical and L1 utterances, while the main trigger in partial recasts was lexical. Another difference mentioned in section 6.4.4. is the fact that the preferred channel for total recasts was the oral channel, while partial recasts occurred frequently through the written channel. Also, most of the non-target-like L1 utterances triggered recasts as the main form of corrective feedback.

Table 46.

Student response for corrective feedback

	No response	**Acknowledgement**	**Uptake**
Clarif req	2	1	2
Conf check	1	1	2
Recasts	32	7	4
Partial recast	18	7	8
TOTAL	53	16	16

As can be seen in Table 46, none of the corrective feedback strategies had a high student response rate (neither acknowledgement nor incorporation). Although negotiation strategies were the least frequent strategies used, they have the highest ratio of student acknowledgement and uptake rates. Nevertheless, the strategy with most instances of uptake was the partial recast.

Concerning types of corrective feedback according to mode, there were three types of ways for providing corrective feedback: through the voice channel, through the text chat or using a combination of both channels.

Table 47

Channels for corrective feedback

	Voice	**Text**	**Voice + Text**
Clarif req	4		1
Conf check	3		1
Recasts	30		13
Partial recast	10	9	14
TOTAL	47	9	29

We can observe in Table 47 that corrective feedback was predominantly given through the oral channel. However, there were frequent instances of bimodal corrective feedback. This use of combined channels had a special presence in the total and partial recasts, as the text channel was used to model the correct form. The text channel used on its own also had a significant presence in partial recasts, which provided a short and fast way of providing corrective feedback without interrupting the flow of interaction. Thus, the text

channel and the combination of audio and text had a significant relevance for total and partial recasts in *Second Life*. The multi channel nature of the environment was used to provide corrective feedback however, monomodal oral feedback was the most predominant type.

6.4.7. Overall corrective feedback.

Corrective feedback did not have a high presence in the data. The most frequent strategies found were recasts, both total and partial, which accounted for 2.9% of the total teacher turns

Table 48

Overall corrective feedback in the data

Feedback type	**Number of occurrences**	**% of corrective feedback**	**% of all the T turns**
Clarification request	5	5%	0.2%
Confirmation check	4	4%	0.1%
Recast	44	44%	1.7%
Partial recast	32	32%	1.2%
Self-repair	15	15%	-
TOTAL	100	100%	3.2%

In Table 49 we can see that the main triggers for corrective feedback were grammatical and lexical, but there was a high presence of the L1 trigger.

Table 49

Triggers for corrective feedback

Trigger	**Number of occurrences**	**% of corrective feedback**
Lexical	27	33.7%
Spelling	2	2.3%
Grammar	31	34.8%
L1	25	29%

Table 50 illustrates that 64.2% of the instances of corrective feedback had no apparent student reaction and generally led to topic continuation. The other 35.7% led to acknowledgement and student reformulation in equal numbers.

Table 50

Student reaction to corrective feedback

St reaction	Number of occurrences	% of corrective feedback
No response	55	64.2%
Acknowledgement	15	17.8%
Incorporation	15	17.8%

6.4.7.1. Overall corrective feedback in two activities

a) Discussion activity

There were few instances of corrective feedback found. The most frequently used corrective feedback strategy used were recasts, especially total recasts, which were an unobtrusive and face-saving way of providing feedback during the discussion. During the discussion task, four out of the eleven recasts were accompanied by a self-repetition carried out through the text chat. These recasts were lexical and the text chat was used to model the lexical item. Although there were many recasts in this task, none of them led to student incorporation and there was just one instance of acknowledgement.

Table 51

Corrective feedback during the discussion activity

Feedback type	Number of occurrences	% of corrective feedback	% of T turns during disc act
Clarification request	1	4.3%	0.7%
Confirmation check	1	4.3%	0.7%
Recast	15	65.2%	10.5%
Partial recast	5	21.7%	3.5%
Self-repair	1	4.3%	0.7%

b) Guided tour

During the guided tour, the range of corrective feedback strategies was more varied, although the preferred strategies were both recasts and partial recasts in the same number, as in the discussion task. During the guided tour task, all the total recasts occurred through the

oral channel, while there were three text-only partial recasts and one bimodal partial recast. Out of the five total recasts, two were acknowledged and two resulted in incorporation. On the other hand, there was only one incorporation in partial recasts and the rest were not acknowledged.

Table 52

Corrective feedback during the guided tour

Feedback type	Number of occurrences	% of corrective feedback	% of T turns during guided tour
Clarification request	1	5%	0.2%
Confirmation check	4	20%	1%
Recast	5	25%	1.3%
Partial recast	6	30%	1.5%
Self-repair	4	20%	1%

6.5. Mode usage

6.5.1. Verbal mode: Floorspace description.

In figure 22, we observe that the teacher displayed a clear preference towards the voice channel, as the audible turns accounted for more than double the total teacher turns. On the other hand, students showed a more balanced use of the audible and the text channels. The IM turns were balanced between the teacher and the students. This is due to the fact that IMs are private, so the teacher only received IMs addressed to her.

In the graph below, we can see that the teacher doubled the audio turns regarding the students', and in contrast, the students used the text chat more frequently than the teacher. We can also observe that there was a low occurrence of private text messages.

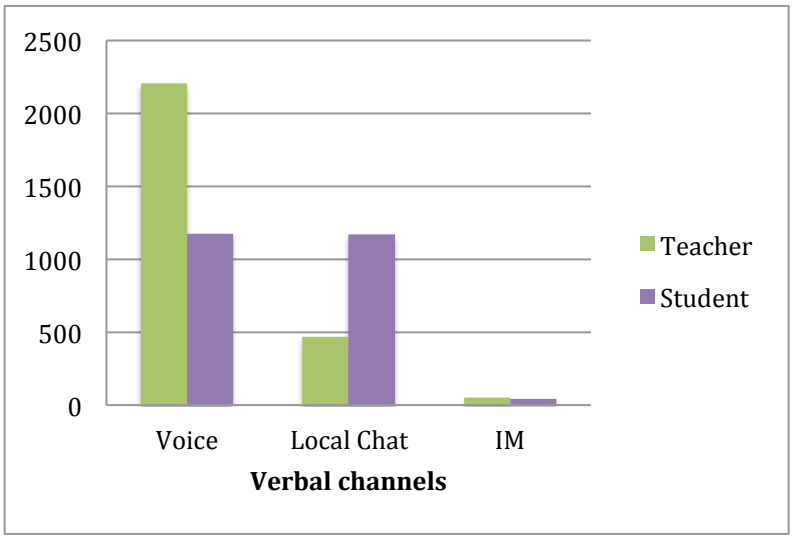


Figure 22. Teacher and student channel use

Table 53

Participant voice participation

Voice participation	Number of utterances	Total words	Average words per utterance	% floorsp (turns
Teacher	2206	36152	15	65%
Student	1177	8660	7.3	35%

Table 54

Participant text participation

Text participation	Number of turns	Total words	Average words per turn	% floorspa (turns)
Teacher	521	2136	4.1	30%
Student	1212	3422	2.8	70%

*Average word floorspace verbal mode (voice + text): teacher 76% and students 24%

Tables 53 and 54 above provide a description of the floorspace of the Virtual Tourism course in *Second Life.* Overall, the teacher took up most of the voice floorspace. If we take into account the number of words, the teacher accounted for 80% of the total voice floorspace. We observe the opposite with the text chat, as the teacher accounted for 38.4% of the floorspace. In both cases, the teacher's utterances and turns were longer than the students'.

In figure 23, we can see that the in most classes, verbal turns from the teacher tended to be slightly higher than the students', except for two of the final city tour tasks, which were student led. In half of the classes, the students showed a preference for the text channel, while the teacher showed a preference for the audio channel in all the sessions. In the last sessions (tour A, B, C), which coincide with the final task, students also displayed a preference for the audio channel.

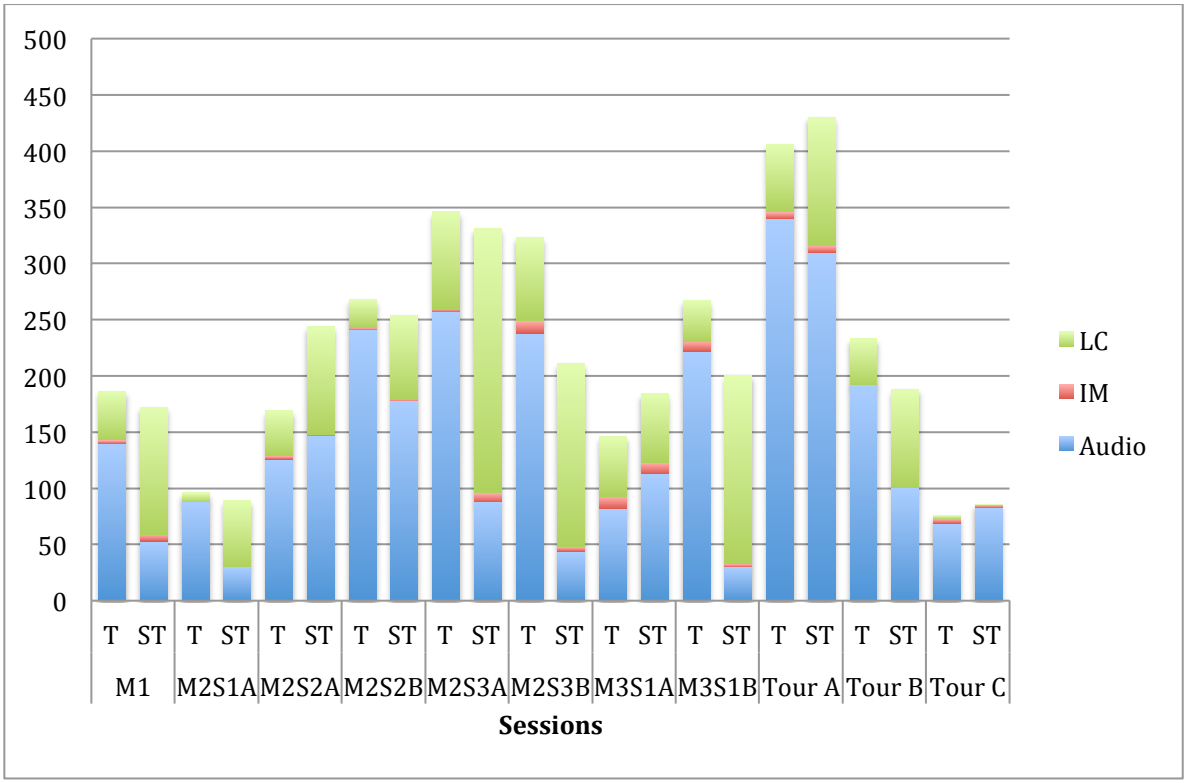


Figure 23. Teacher and student verbal participation by channels

6.5.1.1. Floorspace during the tasks.

The participants displayed a different behavior regarding the floorpsace in the discussion and the guided tour (see appendix J).

In the discussion task, the teacher took up 81% of the total verbal floorspace. In fact, the teacher took up most of the voice floorspace, as her utterances accounted for 82% and 91.3% of the voice floor space for groups A and B respectively. However, in the text chat, it is the students who accounted for a larger part of the floorspace. We can observe a different behavior between groups A and B. Group A shows a balanced use of the text floorspace, where the students take up 51% of it, whereas in group B, the students take up most of the text floorspace, accounting for 84% and thus compensating for their minimal voice floorspace, which accounted for 9.3%.

On the other hand, during the guided tour the teacher takes up 62% of the floorspace. As with the discussion task, the teacher takes up most of the voice floorspace, but not as much as in the discussion activity. There is a slightly more balanced share of the floorspace with the students for groups A and C. However, with group B, the teacher takes up 76.3% of the voice floorspace because two students in that group had sound problems and could not use the microphone. Regarding the text floorspace, there are different results depending on the groups. Group B displays a clear dominance of the text floorspace, accounting for 73.3% of it, and thus compensating for the low percentage of voice floorspace. In group C, the teacher clearly takes up most of the text floorspace, using 80% and in group A, there is a shared use between the teacher and the students. We can also observe that the teacher's utterances and turns are shorter than in the discussion activity, as many of her turns consisted in feedback markers to show presence, without interrupting the flow of interaction.

6.5.1.2. Teacher functions and channels.

In figure 24 we can see that the most predominant function in the data for the teacher was the logistics one, which recorded 954 turns. The second and third most prominent functions after logistics were the task and technical functions, with 922 and 798 turns respectively. There was a low rate of social and form-focused functions, which had 136 and 142 turns respectively.

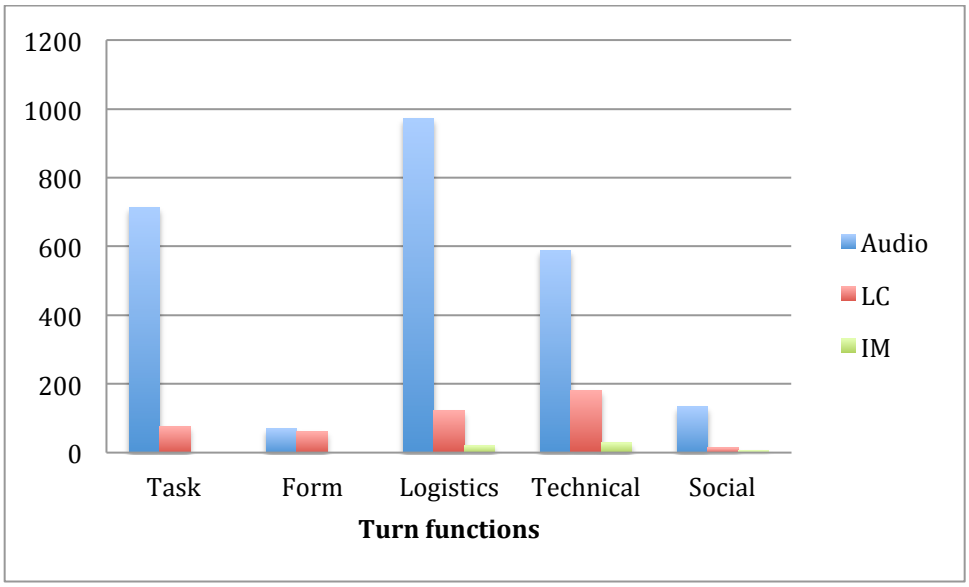


Figure 24. Teacher turns by function and channel

On the other hand, the most predominant function for the students was the task function (934 turns), which accounted for almost 38% of the turns, followed by the logistics (642) and technical (556) functions.

Most of the teacher's task-focused turns were carried out through the audible channel, as it accounted for 90% of the task turns. The other task-related function, the form function, had a balanced number of audible and text-based turns, although the audible utterances were slightly higher. The text chat was used as a strategy to focus and model the important words that appeared in the audible channel or to acknowledge a student's contribution.

Most of the turns that had a logistics function were found in the audible channel (87%), except for private instant messages, many of which had a logistical function. IM

proved to be useful when participants were far apart, as it was the only means of communication that was not distance-dependent. Participants used IM for logistical purposes when they were engaged in group work and needed help from the teacher. Furthermore, through IMs, participants could send each other a teleport invitation so the other could join them in their location.

73% of the turns with a technical function were carried out through the audio channel. Thus, the audio channel was used for giving technical instructions and engaging in channel checks. Nevertheless, this function registered the highest rate of text-based turns within the non-task-related functions. Text chat proved useful to provide step-by-step technical instructions, and was used as a scaffold to help learners follow instructions. This function also registered the highest number of IMs. Thus, private instant messaging was used when students were having technical problems. It proved to be a good way of dealing with individual technical problems and giving a student support in a private way without interrupting the flow of the class.

In the last place, 87% of the social-focused turns were carried out through the audible channel.

Overall, there was a dominance of the voice channel across all functions. Nevertheless, the text chat had a relevant presence in form-focused turns for modeling purposes and in technical turns, to provide instructions that entailed several steps or to give private help.

6.5.1.2.1.Teacher functions and channels during the tasks.

During the discussion activity, most of the teacher's turns were focused on the task and there were few turns devoted to the other functions. We can also observe in figure 25 that the text channel was used infrequently and that it was used mostly used for form-focused turns.

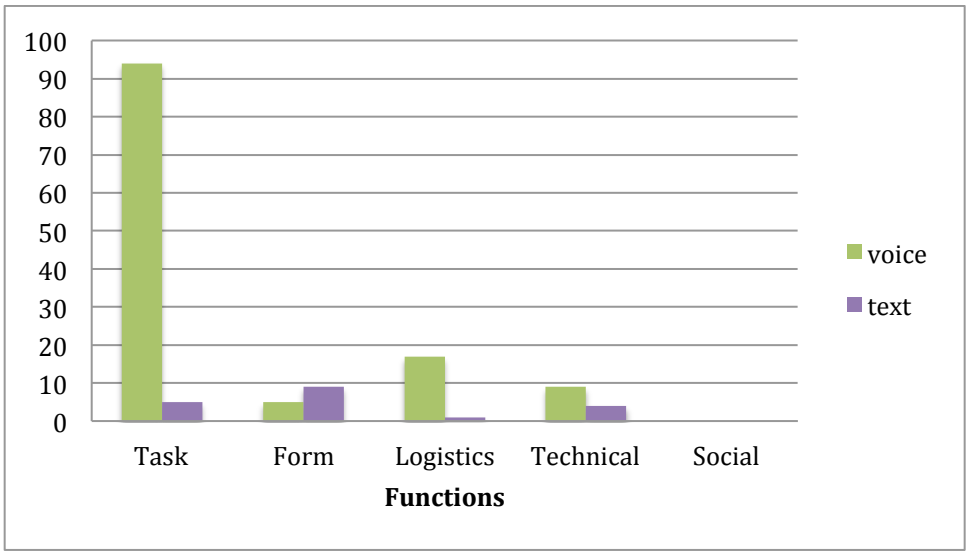


Figure 25. Teacher turns during discussion activity

On the other hand, during the guided tour, the teacher functions were more varied. Although most were task focused, it was followed closely by the logistics function. This is due to the fact that the tours involved location changes and were technically more complex, calling for logistic turns at times. The voice channel was more predominant in all the functions; however, the text chat had a higher presence than in the discussion activity, as it was used to show presence in an unobtrusive way.

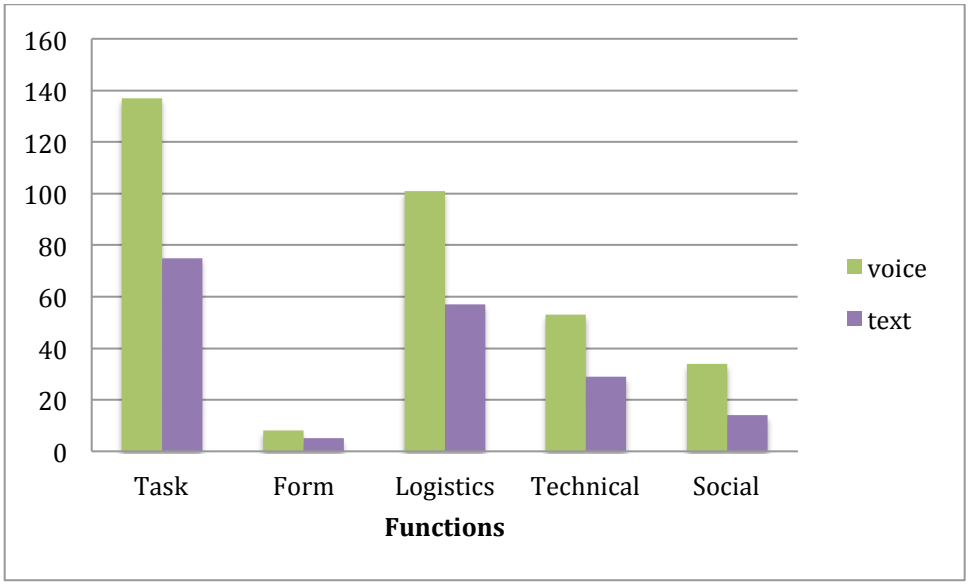


Figure 26. Teacher turns during guided tour

6.5.2. Non-verbal mode: avatar gestures.

There were very few uses of avatar-related non-verbal behavior in the data.

Table 55

Occurrences of non-verbal behavior

	Animation	**Gesture**	**Pointing**
Teacher	6	6	28
Student	14	5	13

Both students and teacher engaged in animations that were activated by interacting with objects in *Second Life* during the virtual field tips. In fact, animations were the most popular avatar-related actions among students, showing that they were willing to experiment with the playful nature of the environment.

Apart from animations available in the online environment, avatars have a folder with gestures they can activate. The teacher only used the waving and the clapping gesture. Most instances happened during the first session because a part of this session was devoted to teaching gestures. Likewise, all the gestures the students performed happened in the first session. Thus, the participants made no significant use of gestures.

Pointing was the avatar-related act that was most used by the teacher and the second most used by the students, after animations.

6.5.3. Interplay of Modes.

A number of MUVE strategies that were identified put into play more than one communication mode.

6.5.3.1. Verbal Mode: Channel Switches.

Channel switches were found in both teacher and student turns, but the teacher switched channels more frequently than the students, as can be seen in Table 56.

Table 56

Teacher and student channel switches

	Oral-Written	**Written-Oral**	**TOTAL**
Teacher	415	38	453
Student	34	12	46

a) Student channel switches

Student channel switches were less frequent than teacher channel switches and were used as a technical compensation strategy. Following are situations when students opted for channel switches:

- When students had microphone problems, they would switch channels to make themselves understood.

  4a7400:(0:30:26.1) T: interesting. OK, uhm do you want do you want to show us anything else of San Francisco or should we go to Paris?
  p4a7401:(0:30:35.2) JoDa: San Francisco is ???
  p4a7402:(0:30:37.5) T: sorry? San Francisco is?
  p4a7403:(0:30:41.8) JoDa: eh: ????
  p4a7404:(0:30:44.0) T: ai, sorry, Jo, I can't I can't understand you. Ehm is it over?
  p4a9264:(0:30:47.2) T (LC): is it over?
  p4a9265:(0:30:49.4) ***JoDa (LC): that's all***

In this example, JoDa is giving a guided tour of San Francisco, but he has microphone problems. His last utterance is unclear, and after repetition requests by the teacher and a classmate, the teacher repeats her question through the text channel and JoDa performs a channel switch, repeating his answer through the text channel.

- When an addressee was not responding through the audio channel, the sender switched channels, using the text channel as a compensatory strategy.

  p3a8668:(0:39:56) RuDo: Ma, we: look around and and looking information or...?
  p3a8670:(0:40:16.7) ***RuDo (LC): maiaaa???***
  p3a8671:(0:40:20.5) MaBe (LC): yes

In this example, a RuDo asks MaBe a question. As MaBe does not respond, RuDo calls her though the text chat, to which MaBe responds using the text chat.

- When there was a change in addressee. Some students used the audio channel to talk to the teacher and the text chat to communicate with another student.

p6a3336: (1:04:06.0) T: uhm al fons do you mean 'at the end' of the: of the room or of the corridor?
p6a3337: (1:04:11.4) ***LaAd: at the end, yes OK****.*
p6a3338:(1:04:37.4) ***LaAd (LC): nomes havia escrit lo de les caratules***
p6a3339:(1:04:44.5) ArCh (LC): valee

Here, LaAd asks the teacher through the voice channel how to say a word in English. After the teacher's answer, La acknowledges the answer through the voice chatand she sends her next turn, which is addressed to her classmate LaAd, through the text chat.

- There ware also instances of 'channel convergence'. In these cases, the students adapt to the channel the teacher makes the request in.

p7a2564:(0:26:01.5) T: do you know how to send a private message?
p7a2565:(0:26:08.4) MaBe: a private message for you?
p7a2566:(0:26:10.8) T: uh: to anybody
p7a2567:(0:26:11.2) T (LC): do you know how to send an IM
p7a2568:(0:26:17.7) ***MaBe (LC): YES I THILNK***

In this example, the teacher asks MaBe through the voice channel if she knows how to send a private message, MaBe makes a clarification request through the oral channel and the teacher then, using the text chat, rephrases her question. MaBe then responds through the text channel.

- After a repetition request.

p8a3453:(0:07:53.4) RuDo: psicodelic
p8a3454:(0:07:54.8) ***T: sorry Vi?***
p8a3458:(0:08:08.5) ***RuDo (LC): psicodelic***

In this example, the teacher is asking the students to brainstorm words that come to their head when they see a picture. RuDo offers a word, but the teacher does not hear her so she asks for repetition. RuDo then changes to the text channel, to ensure the message is received.

b) Teacher channel switches

There were 453 teacher channel switches found in the data. Teacher channel switches accounted for 15.4% of the total teacher turns.

Most channel switches occurred during the fluency (190) and procedural (176) classroom contexts. Channel switches in the procedural context were used to:

- Deal with technical sound problems or other technical disruptions.

p4a5013:(0:00:01.4) T: Hello: Co:. Can you hear me?
p4a5017:(0:00:13.5) T: oh oh I think Co Co's voice isn't working. [3] Wait, let me teleport Ar, teleport [p] and La.
p4a5019:(0:00:47.9) ***T (LC): co, your voice isnt working right?***
p4a5021:(0:01:21.8) NoLe (LC): i'll try with the voice now
p4a5022:(0:01:26.2) T: oh OK!

In this example, the teacher initiates a channel check with NoLe. After 46 seconds, she repeats her channel check in the written channel. NoLe acknowledges the channel check and tells the teacher that she will check her microphone.

- To summarize class instructions for people who were having sound problems or who could not follow the instructions. Most of the instructions that had a channel switch were related to technical instructions.

p10a3626:(0:21:55.3) T: OK guys remember to turn off uh: to stop... if you want to stop hearing the music, there's a: pause button on the upper right hand corner of the window. Next to the time.
p10a3627:(0:22:12.6) MaBe (LC): whatt¿¿
p10a3628:(0:22:15.2) T: to stop hearing the music,
*p10a3629:(0:22:21.2****) T (LC): to stop hearing the music***
p10a3630:(0:22:31.4) T (LC): there's a button on the top rigt-hand corner of the window
*p10a3631:(0:22:35.8****) T: next to the time,***
p10a3632:(0:22:38.5) ***T (LC): next to the time***

In this example, the group arrives at a location with streaming music. The teacher gives them instructions to turn off the music. MaBe asks for repetition through the text channel. As the teacher does not know if MaBe is having sound problems or if the streaming

music is making it difficult for students to receive messages through the oral channel, the teacher engages in channel switches. The teacher then repeats the instructions on both channels: she starts in the oral channel and repeats the instruction in the text chat, she continues with the next step in the text channel and delivers the last step through the voice chat and repeats it again through the text channel.

During the fluency classroom context, channel switches were used:

- To model new words that came up during the task.

p5a5532:(0:04:32.6) MaBe: I like eh: Pompi Pompidur, because it's very original.
p5a5533:(0:04:37.2) T: Uhm can-- what is this monument? can you describe it a little bit?
p5a5534:(0:04:44.2) MaBe: it's a museum, ehm it have a lot of 'tuberias'?
p5a5535:(0:04:50.8) T: a lot of uh: tubes, aha
p5a8533:(0:04:54.1) ***T (LC): tubes***
p5a5537:(0:04:56.5) MaBe: eh: and it's in the center of Paris, at 5 minutes walking of Notre Damme.

Here, MaBe is mentioning her favorite monument in San Francisco. The teacher asks her to describe it and when MaBe starts describing the building, she asks for the translation of a word that she does not know in English. The teacher gives her the word and then switches to the written channel to model it.

- To show presence and encouragement to follow unobtrusively while students are holding the floor.

p4a5258:(0:29:56.6) ArCh: here we can see a very colorful floor. And there are not a lot of things ah: but the carpet is blue a: with the yellow submarine.
p4a5259:(0:30:10.6) T: mhm
p4a5260:(0:30:12.0) ArCh: there are also, there is also a fa: uhm a poster of the Beatles with the famous words of the song. All you need is love.
p4a5262:(0:30:31.1) ***T (LC): great***

In the example above, ArCh is giving a tour of the Beatles museum. The teacher shows presence with a feedback marker through the oral channel and then switches to the

written channel to give her a praising remark. By switching channels, she does not interrupt ArCh and can show presence and encouragement.

Table 57

Teacher channel switches and function.

	Form	**Task**	**Logistics**	**Technical**	**Social**	**TOTAL**
Oral-written	62	85	98	162	9	415
Written- Oral	2	13	8	14	1	38
TOTAL	64	98	106	176	10	453

Most channel switches had a technical purpose. Half of the technical channel switches (84) were self-repetitions of technical instructions or channel checks given in the audio channel.

Channel switches with a technical function were used to summarize and repeat technical instructions that had been given in the oral channel and were also used to deal with the students' technical problems.

p4a5187:(0:19:58.7) T: Nore, uhm Co, can you hear us?
p4a5188:(0:20:07.0) ***T (LC): co can you hear us?***
p4a5189:(0:20:08.4) T: try to log out and log in again
p4a5190:(0:20:13.7) ***T (LC): if not try to log out and log in again***
p4a5197:(0:21:10.2) T-NoLe (IM): co, me sales como no conectada
p4a5203:(0:21:30.7) T-NoLe (IM): quizás irá mejor si sales y vuelves a entrar?
p4t9666:(0:21:33) NoLe disappears

In this example, NoLe is not responding through the oral channel. The teacher then switches to the text channel, but does not get a response either. She finally decides to send NoLe a private message and in NoLe's L1 she tells her that she is having technical problems and that she had better log out and log in again. NoLe disappears from the environment three seconds later. Here the teacher used three different communication channels with NoLe, however, it is not clear if the teacher succeeded in getting her message across to NoLe or if the program crashed in her computer and she was automatically logged out.

Channel switches with a logistics nature were used to organize the classroom environment such as the layout of the class, form groups and time management. This strategy was also used to repeat instructions.

p4a5041:(0:04:07.9) T: Do you want to take a seat?
p4t9633:(0:04:19) MeBa sits down
p4a5042:(0:04:27.4) ***T (LC): do you want to take a seat girls?***
p4t9634:(0:04:40) LaAd and ArCh sit down

This example shows the beginning of the class. After the greetings, the teacher invites the students to sit on the carpet through the voice channel. MeBa sits down, but LaAd and ArCh are still standing. The teacher then switches to the written channel and adds a generic addressivity marker to her request. Ar and La then sit down.

Channel switches with a task function were used to provide unobtrusive positive feedback, echo students' contributions for the whole class or repeat questions or ideas in the text channel.

p2a8279:(0:39:34) T: OK so what uhm what are you going to show? what did you find interesting?
p2a8280:(0:39:42) T: do you see what happens for example in this corridor, in this hall? sometimes?
p2a8284:(0:40:15) T: do you see the floor that disappears?
p2a8283:(0:40:21.4) ***T (LC): the floor disappears***
p2a8285:(0:40:29.1) RuHa (LC): no
p2a2669:(0:40:30.5) T: no? the floor you're you're stepping on, sometimes it becomes like a: a river with stones or something that that floats, the tiles disappear.

In this example, the teacher is helping a group prepare a tour of a museum. She first asks them a general question of what they would like to show, and after eight seconds of silence, she gives them a more specific question and asks them if they have noticed something in the hall of the museum. As there is no response, 33 seconds later she asks them if they have noticed the floor disappearing. She then switches channels repeats the idea in the text channel, and finally RuHa responds negatively.

Channel switches with a form function were used to model words or expressions that came up in a task or to provide corrective feedback.

p6a9325:(0:37:50) NoLe: go to this prison and is more and was more difficult eh: go out of here. of the...
p6a6864:(0:37:59.1) T: mhm, it was difficult to get out, to escape, right?
p6a6865:(0:38:04.9) NoLe: yes, to escape.
p6a6866:(0:38:05.9) T: mhm
p6a6867:(0:38:07.3) ***T (LC): it was difficult to escape***

In this example, NoLe is talking about Alcatraz. She is struggling with her message and the teacher recasts her message. NoLe confirms and repeats part of the recast. The teacher then repeats her recast in the written channel.

Channel switches with a social function were not used very often. They were used in greetings when the teacher perceived that the student could not hear the voice message.

p7a7158:(0:00:47.7) T: hello La!
p7a9147:(0:00:57.8) T (LC): hello La
p7a9149:(0:01:09.8) LaAd (LC): hello

In this example, the teacher greets La through the audio channel, but, as she does not respond, she switches to the written channel, to which LaAd responds, also through the written channel.

6.5.3.2. Verbal And Visual Mode: Location check.

Although there were few avatar-related strategies, there were some strategies that combined the verbal and the visual mode, which were used to make communication more effective and to avoid ambiguities. The visual mode played an important role in MUVE communication, especially in context-dependent tasks such as guided tours.

There were 35 instances of location checks found, and this strategy was found across all the sessions. There were generally between one and five location checks per session, except for one session that had ten location checks. This session coincided with a group's

final task in which the group had prepared a guided tour through different locations in San Francisco. There were no location checks found in discussion tasks, which were carried out sitting in one place and were not context-dependent.

Three types of location checks were identified in the data:

a) **After a location change.** The most frequent location checks had the aim of checking if everyone was in the group after a teleport or change of location. 27 location checks (77%) had this aim. Sometimes there would be a student missing, so the location check would be followed by a teleport offer if the student was lost. Out of the 27 location checks in this category, 7 were followed by a teleport offer.

> *(0:41:16.2) T: OK, girls, see you there. You can uhm teleport us when you get there.*
> *(0:42:00) T teleports to Golden Gate beach club*
> *p11a9315:(0:43:29) T: Wait, let's teleport Me.* ***Where's MeBa?***
> *(0:43:38.9) T looks for MeBa in her friend list and sends her a tp offer*

In this example, the students have left Fishermen's Wharf in San Francisco and have teleported to the Golden Gate. When the teacher gets to the Golden Gate, she realizes that MeBa is missing, expressed in the location check and then sends her a teleport offer.

b) **Need for being explicit in shared space**. Other times, although the avatars were in the same place as the teacher, the teacher could not see them and needed the student to indicate their position. This happened in seven cases.

> *p10a6158:(0:40:36.6) T: hello Me!* ***Where's Co?***
> *(0:40:46) NoLe is standing at the entrance of a shop*
> *(0:40:44) T: Ah, here she is. [2] How are you doing? Have you seen anything? Have you seen the Golden Gate?*

In this example, the teacher has teleported to the students' location and she can't see Co, MeBa's partner. Co is looking at the store across the street, so it takes the teacher a couple of seconds to see Co.

c) **Technical problems.** Four location checks were triggered by technical problems or bugs in *Second Life*.

(0:02:22.4) T: Ru, have you teleported Pa? or should I teleport her?
(0:02:28.0) RuDo: yes, it's here
(0:02:29.1) T: ah OK, perfect. I can't see Pa yet, I think.
(0:02:36.9) MaBe: I'm here!
p5a7576:(0:02:39.6) T: ***where? where are you?***
(0:02:40.5) RuDo: in your right

In this example, Pa was standing next to the teacher, but she could not see her because she had just teleported and the graphic environment was still loading.

6.5.3.3. Verbal And Visual Mode: In-World Reference.

Both the teacher and the students needed to refer to the shared visual space. As can be seen in the table, both the teacher and the students used verbal and visual strategies to make in-world references, however, their preferred mode to refer to in-world objects was the verbal mode.

Table 58

Teacher and student in-world reference

In-world reference	**VERBAL**		**VISUAL**	
	Deictics	**Term**	**pointing**	**proximity**
T	126	**182**	11	**44**
St	36	**64**	3	22

a) Verbal reference

The most frequent way of making references to in-world objects was by naming the object.

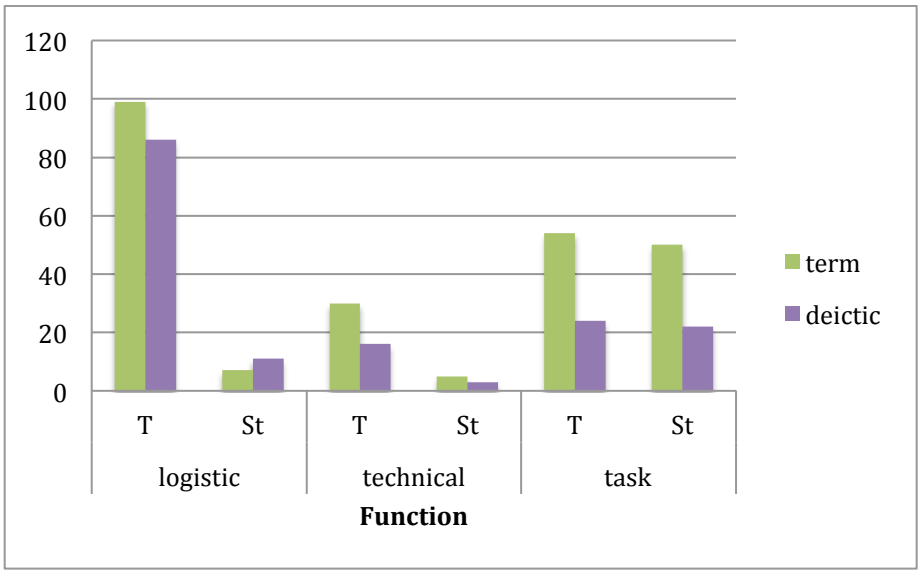


Figure 27. Verbal in-world reference and function

As can be seen in figure 27, the teacher referred to the in-world objects for logistica, technical, and task purposes. Most references had a logistical function.

- **Logistical purpose**: the teacher made references to move from one place to the other, to check that the group was nearby or during instructions. The main deictics with a logistical function were*: here, it, one* and *this*.

> *p6a7094:(0:57:51.7) T: Ne... where's Co? Did she fly away?*
> *p6t9299:(0:57:53) MeBa and KeHu stop flying and walk to the T's location*
> *p6a9191:(0:58:04) T: where's Co? Wait, can somebody teleport her? I think she... let's come **here** for a second?*
> *p6a7095:(0:58:12.6) KH: Co:*
> *p6a7096:(0:58:16.4) T: I see Co flying.*
> *p6a9192:(0:58:19) T: Co!*
> *p6a7097:(0:58:22.1) NoLe: [laughs] me he perdido!*
> *p6a7098:(0:58:23.8) T: **here here**, just uhm we can see you from **here**. We're in **the first house.** OK.*
> *p6t9300:(0:58:35) NoLe lands and joins the group*

In this example, the group is exploring the houses in Lombard Street and a NoLe flies away. The teacher, using the deictic 'here' tells the group to come to where she is standing. Me and Ke come, but No is still flying. The teacher repeats her request using the deictic

‘here’ and using a term to specify her location.

- **Task purpose:** there were many references during the guided tours as they were tours based on locations.

> *p2a2587:(0:28:16.0) T: yeah they played on the roof. so **this** is a recreation of a: of this moment, of this famous concert that they did.*
> *p2a2588:(0:28:23.9) RuDo: ah:!*
> *p2a8227:(0:28:24) ElMc: OK!*
> *p2a2589:(0:28:27.2) T: so you can talk a little bit about **this**, ok? you have uhm you see? all the **instruments for a concert the drums, the piano,....***
> *p2a8228:(0:28:36.2) RuDo (LC): yees*

In this example, the group is exploring the Beatles museum and they are on the rooftop, looking at a recreation of the band’s instruments used during the rooftop concert. The teacher uses the deictic ‘this’ to refer to the recreation and then names the instruments that are on the roof.

Students mainly made in-world references with a task function, as most of them were found during their guided tours, these tours were context-dependent tasks and students needed to refer to the visual environment during their tours.

- **Technical purpose**: the teacher made reference to objects, to tell students how to activate the in-world object in order to teleport to another location or animate their avatar. There were few deictics used with a technical function. The main technical deictic was *here*.

> *p2a2443:(0:14:24.0) T: OK this museum has some special effects, [echo] you are going to hear voices. so uhm in order to hear these voices, you have to put something on, put a badge on. It's like a like a a: a pin on your sweater. so to do this, do you see this re **yellow: cylinder**? you have to click on it, and select guardar.*

In this example the teacher is showing the students how to save an object into their inventory and tells the students to click on a yellow cylinder that is near them.

b) Visual reference

Participants also made use of non-verbal strategies to refer to objects in the MUVE environment. Two non-verbal strategies found in the data were pointing and avatar proximity.

- Pointing

There were few instances of pointing, the teacher used pointing on eleven occasions for two main reasons (1) pointing to exemplify an instruction, and (2) pointing to refer to an object.

> p2a129:(0:15:01.8) T: Oh Pa, perfect. What you have to do is, um: right click on the picture, on the painting, and: select, sentarme aqui. you'll see what happens.
> p2a129:(0:15:03) **T points at picture**

In the example above, the teacher is telling Pa to point at a picture and select an option from a contextual menu that appears. The teacher points at the picture to exemplify her instruction.

> *p3a5516:(0:02:33.5) T: OK, I think we're going to start, uhm these are the last, uhm this is the last module of Second Life that we're going to do this year, uhm today we're going to have the first session and then we'll have two more sessions. And this is called virtual tourism, we're going to do a little bit of virtual tourism. So, if you take a look at this picture, do you know uhm what city this picture was taken in? Do you know what's the name of this cathedral?*
> *p3t8716:(0:02:49) T walks towards the picture of the Cathedral of Notredamme*
> *p3t8717:(0:02:59)* ***T points at picture of Cathedral of Notredamme***

In this example, the teacher shows the students a picture of the Notredamme Cathedral and points at the picture to direct students' attention to it.

The student just used conscious pointing on three occasions, all of which were triggered by the teacher requesting the student to point at an object.

- **Proximity**

Most instances of teacher proximity were found during the guided tours and were used as a means to (1) avoid ambiguities during the tour, and (2) direct students' attention to an object or place.

p6a3350:(1:06:30.4) T (LC): do you know what the instrument in the corner is?
p6a3351:(1:06:36.4) T (LC): this long guitar?
p6t9840:(1:07:01) ***T walks to sitar***

In the example above, the group is in a room with musical instruments. The teacher asks the students about an instrument in the corner, and walks towards the instrument to avoid ambiguities.

In the following example, the teacher walks towards a picture to direct the students' attention and asks them what they can see in it using a deictic. The teacher's proximity to the picture is enough for the students to know which picture she is referring to.

p3a8546:(0:08:51) T: OK, uhm, well we're going to visit Paris, today, well, virtual Paris, let's see if we find all the monuments you were talking about, the Eiffel Tower, eh Notre Damme is also very nice. And the other picture that I wanted to show you is this one to the right, do you know what this is?
*p3t8723:(0:9:08****) T walks towards Golden Gate poster***
p3a5577:(0:09:11.4) MaBe: Golden Gate?

Regarding the students, this behavior was found when students were acting as the tour guides and when preparing for the guided tour.

p2a7930:(0:03:27) T: Ready? [2] OK! Who has a painting that they would like to show? Who has a painting that they like? [2] You can talk if you want, eh? You don't have to type.
p2a21:(0:03:41.1) ElMc: the lighthouse
p2a22:(0:03:43.6) T: the lighthouse: let's see Elsa where is it? where are you?
p2a7876:(0:03:48.6) JoDa (LC): yes i like it too
p2a24:(0:03:49.3) ***ElMc: in front of me***
p2a21:(0:03:41.1) ***ElMc is standing opposite a painting***

Here, a student in turn 2 says that she likes the lighthouse picture. The teacher asks her where the picture is and she responds that she is standing in front of it, using proximity as a means of clarification.

6.5.3.4. Verbal And Visual Mode: Visual addressivity

Two different types of addressivity were identified in the data based on the visual mode: verbal addressivity (i.e. addressivity with no proxemics) and visual addressivity (i.e. addressivity with a proxemics component).

a) Verbal addressivity with no avatar proximity

This type was found when the avatar was far away from the interlocutor or the addressee had their back turned to their interlocutor. There were 62 cases of addressivity with an absence of non-verbal proxemic behavior. Most occurrences happened:

- At the start of the class, when students were getting settled in and finding their place.

p4t9361:(0:00:34) LaAd appears
p4a7158:(0:00:47.7) T: hello La!
p4a9147:(0:00:57.8) T (LC): hello La
p4t9362:(0:00:58) LaAd sits on cushion
p4a9149:(0:01:09.8) LaAd (LC): hello

In this example, La has just arrived and is standing behind the teacher. The teacher greets her immediately, although they are not facing each other. After this utterance she goes to find a cushion to sit on.

- During a moving or transition stage of the class such as a walking tour, in which participants are not sitting in a circle, they are moving from one location to another. This could happen because a participant was lost, because the teacher is asking the participants to come to her location or because the participants were walking.

p2a65:(0:07:33.2) T: Elsa! Can you: see me?
p2a7884:(0:07:37.3) T (LC): elsa
p2a67:(0:07:38.8) EM: yes it's..

p2a68:(0:07:39.8) T: we're outside
p2a69:(0:07:41.0) ElMc: ??? my computer

In this example, the participant has stayed behind and has not followed the group to the next room. The teacher is calling her to come. She then explains that she is behind because she is having technical problems.

b) Verbal addressivity with avatar proximity

We can observe in Table 59 that proxemic rules were usually transferred to the MUVE as most cases of addressivity had a proxemic component. This result applies to the when the teacher is in front of a group or the whole class and when the teacher is facing only one avatar. We also observe that when the teacher just had one student near, the explicit addressivity rate goes down as well as the proxemics component, as the number of addressivity without proxemics and addressivity with proxemics is not too different.

Table 59.

Types of teacher addressivity regarding the avatars' proxemics behavior

Addressivity	with a group	with an individual	TOTAL
Name (no proximity)	33	29	62
Name + avi proximity	483	41	524
Generic addressivity + proximity	12	-	12
TOTAL	528	70	

Sometimes, usually after a location change, it took some time to adjust to the proxemic norms. For example:

p9a5313:(0:37:55.9) T: Me, I think that:, wait, let's see if Co and hear us, if not it's only you. Wait, I teleported Co,
p9a5314:(0:38:33.5) T: Me, can you hear me?

In this example, the group has just teleported to a museum, the participants have just arrived at a new location. The teacher starts talking to a student with her avatar's back turned to the student. The teacher initiates her discourse before adjusting to the new layout. However, in the second turn, the teacher's avatar has turned to face the student's avatar. This

may be due to the fact that the student does not react to the teacher's first turn so the teacher turns around and initiates a channel check.

p10a8947:(0:41:48) T: Co! Can you come?
p10a8949:(0:41:54) T: Co! Co, can you come here a second? [2] I was telling Me that uhm...

Something similar happens in this example. In the first turn, the teacher calls to Co from a distance. In the second turn she walks closer to her to repeat her request.

However, most of the times that the teacher used addressivity, it was combined with proximity. This occurrence was observed in all classroom contexts. The lessons observed in the corpus had usually two class settings: the sitting layout and the walking tour setting.

The class always started and usually ended on the class island and there was a carpet so students sat in a circle at the beginning of each class. Here, proxemics is conditioned by the teacher's design of the spatial layout: the carpet had animated cushions, so, by sitting on the cushions, the participants were automatically facing each other.

p3a5524:(0:03:37.5) T: ah oK, Pa, and Ma and Ru? Have you been to Paris?

Here students are sitting in a circle at the beginning of the class, and they are having a discussion on cities in preparation for their next task.

The rest of the class took place in several locations, including museums or cities. However it was observed that when participants moved around, they tended to join a circle again when arriving at the new destination.

p9a5191:(0:20:15.9) T: OK, Ar and La? Ar and La, you are in charge of this museum, yeah?
p9a5192:(0:20:24.7) LaAd (LC): yes

In this example, all the participants have teleported to the museum and are waiting in a circle for the guides to start.

Finally, on just two occasions, the teacher made use of her avatar gestures for addressivity purposes.

p8t9572:(0:50:47.3) T (gesture): Hey! [SS haven't arrived at room yet]
p11t9239:(0:35:20) T makes waving gesture

This strategy was only used twice by the teacher for attention calling. This low use could be due to the fact that gestures were not easy to activate in *Second Life*. If users want to make use of gestures, they have to go into their inventory, look for the gestures folder and activate the gesture. This means that gestures and as readily available as the verbal channels.

Thus, the participants did have a sense of presence in *Second Life* as in most occasions addressivity was used in conjunction with avatar proximity. That is, the face-to-face proxemic norms speakers have in face-to face context were transferred to a MUVE context.

Chapter 7: Discussion

Figure 28. Participants standing around Fisherman's Wharf

In this chapter, the results from the analysis presented in chapter six will be discussed and contrasted with other studies presented in the literature review. This chapter will explore the online behavior of the participants in the MUVE classes and how the interlocutors adjusted their communication strategies to the environment. This chapter is divided into four parts: transactional and interactional strategies, teacher interactional modifications, corrective feedback, and participant use of the different modes available in the MUVE. Each of the sections starts by discussing the strategy, modification device or modal usage that appeared in the data as a whole and ends with an analysis which focuses on two different activities that took place during the last module: a teacher-led discussion activity and a student-led guided tour.

The first section is devoted to transactional strategies, which was the most prominent discourse management type found in the data. Transactional strategies are followed by interactional strategies, which were used by participants to show politeness and establish an online community.

The second section discusses the interactional modifications that the teacher used with her students and includes negotiation strategies as well as other modifications such as self-repetitions and self-reformulations. We will also see how the teacher used the different channels of communication during interactional modifications to make her discourse more comprehensible.

The third part focuses on the corrective feedback that the teacher provided in the MUVE and discusses how the different channels were used to provide corrective feedback, what triggered repair, and what the student response was.

The last part discusses how participants made use of the different communication modes and channels available to create meaning by analyzing the floorspace, the functions of the different channels and the strategies that made use of more than one mode.

7.1. Transactional Strategies

Herring (2001) states that the online medium possesses two properties that can pose challenges to interaction management: disrupted turn adjacency and lack of visual cues to provide feedback. Thus, users in an online environment need to develop strategies to overcome these obstacles and manage their interaction successfully.

This section discusses the transactional strategies found in the data, which were used to manage communication more effectively in the MUVE. Many strategies have been already identified in previous synchronous CMC research and the results of the present study will be compared to those reported by existing literature. However, there have also been some strategies that have not yet been reported.

7.1.1. 'I'm talking to you': Addressivity in a MUVE.

Synchronous CMC researchers have reported a high frequency of explicit verbal addressivity in text chat as a strategy for tracking other users' messages and for coping with disruptive turn adjacency (Werry, 1996; Herring, 2001). However, the present data only had 55 instances of addressivity in the text channel and there were no instances that fulfilled that function. There was not a high density of text chat occurring at a fast pace as the abovementioned studies report. Nevertheless, there was a high frequency of addressivity used in the voice channel, which was employed to avoid ambiguity or confusion with the intended addressee of the message, and to strengthen the link between the interlocutors, which is in line with Werry's (1996) report.

Addressivity had an important presence in the data, as it was the second most frequently used transactional strategy by the teacher. This strategy accounted for 21.5% of the total teacher turns, and for 34.6% of the total transactional strategies. Although Peterson (2008) reports a high density of addressivity in his data, it only accounted for 5% of the learners' turns. He hypothesizes that this low rate could be due to the design of the MUVE, which places the sender's nickname at the beginning of the message, and also to the possibility of moving the participants' avatars closer to each other, to make the reading of the messages and the turn tracking easier. Nevertheless, he reports that this strategy was the third most popular transactional strategy, accounting for 24.8 % of the total transactional strategies. Thus, medium variables such as the channels of communication and how the messages are displayed in the interface could have an effect on the frequency of addressivity in text-based SCMC. In *Second Life*, when a participant uses the text channel, the sender's name is displayed, however, when using the voice channel the sender is less clear, hence, there is a greater need of this strategy in the voice chat to avoid ambiguity.

Furthermore, addressivity has been identified as an important strategy in online environments due to the absence of paralinguistic cues (Werry, 1996; Herring, 2001). This strategy can compensate for the lack or paucity of these cues and can be used as a means to obtain the addressee's attention. The high presence of addressivity in the present data corroborates Werry's and Herring's findings, as addressivity was found to be used as a compensatory strategy to clarify who the intended addressee of a message was in a world were nonverbal cues such as gaze are limited. Nevertheless, although addressivity was one of the most prominent online strategies found, it was not as high as expected. This result could be due to several reasons. The number of participants could be an important factor; there were fewer participants in the MUVE sessions than in Werry's IRC study, causing less likelihood of having numerous fast-paced turns and many potential addressees, which can result in confusion or ambiguity (Naper, 2011). Secondly, in *Second Life*, the visual nature of a 3D virtual world allows the participant to place the avatar close to their interlocutor, reducing the likelihood of ambiguity and thus the need for explicit addressivity (Peterson, 2008; Naper, 2011). The visual nature of this MUVE and how it affected addressivity will be explored in section 7.5.4.3. in this chapter.

7.1.1.1. Types of addressivity.

As reported by Peterson (2008) and Naper (2011) regarding learner interaction in a MUVE, instances of teacher addressivity were found in three different positions within a turn: at the beginning, in the middle, and at the end. The most prevalent position in the data was in the middle of the turn, which contrasts with Peterson (2008) who found that the beginning position was the most frequent one, and with Naper (2011) who reports that placing the name at the end of the utterance was the most frequent position in her data. In light of the disparity of results regarding the position of the name, there seems to be no difference in functions to be reported regarding the position of the participant's name in a

turn. The main function in the teacher's use of addressivity was to make an addressee explicit to avoid ambiguity and to ensure a reaction or response from the addressee regardless of the position of the name within a turn.

Other types of addressivity that were found were *zero addressivity* (Werry, 1996: Peterson, 2008) and *generic addressivity*. Regarding *zero addressivity*, Werry (1996) states that "sometimes the content of a message provides sufficient cohesive force such that it is clear who a statement is intended for without them needing to be explicitly named." (p.53). The preferred form that the teacher used to address a group was *zero addressivity,* which aligns with Werry's (1996) and Peterson's (2008) findings. This type of addressivity was found when the recipient of the message was clear from the context or when the teacher was addressing the group as a whole.

7.1.1.2. Addressivity and classroom context.

The classroom context that recorded the highest number of addressivity instances was the procedural context. Addressivity served mostly technical and logistical functions in this context. This strategy was used for technical purposes such as channel checks, or to provide technical help. Explicit verbal addressivity was needed especially in technical turns to maintain coherence, avoid communication breakdowns produced by the ambiguity of not having an explicit addressee, and to ensure that everyone's technical problems were dealt with. Regarding logistics, addressivity was used to organize the classroom layout and to form groups. This finding confirms Peterson's (2008) who found that verbal addressivity was particularly high among learners before starting the task as students used this strategy as a way of finding a partner for their task, which coincides with the logistics use found in the present data. During task instructions, the teacher tended to use *zero addressivity*, as she was addressing the group as a whole.

The second most frequent classroom stage was the fluency context. Here, the most prominent functions were task and logistics. Addressivity was used to ask directed and follow-up questions during discussions, to elicit input from specific students, and to acknowledge a turn or give a student positive feedback. The teacher tended to include the student's name when giving positive feedback or praise. This strategy, apart from acknowledging a student's turn, contributed to create a positive learning environment and foster participation. Regarding the logistics function, addressivity was used to signal it was a student's turn to hold the floor, and to elicit questions from students after a presentation.

The task-oriented context did not register a high frequency of addressivity instances. The teacher used addressivity here to check on student progress, to repeat instructions or to gather students in the same location when they were doing group work.

The social classroom context was the context that registered the fewest instances of addressivity. Most of them except for one were found in the greeting stage of the class. This is probably because students did not arrive at the exact same time, so the teacher had time to greet them personally and use the greeting to initiate channel checks (channel checks will be discussed further in section 7.1.5). On the other hand, at the end of the class, everyone left at the same time, so there was a generic leave taking using *zero addressivity*.

From a function perspective, most occurrences were technical (223) or logistical (213) in similar numbers. This means that addressivity was an important strategy in procedural rather than task-based turns. From a technical standpoint, it was used in sound checks or to deal with technical problems. When there were technical problems, it was important to reduce possibilities of ambiguity by including the name of the addressee. Technical instructions called for more explicit addressivity than task instructions, which used generic forms of addressivity. Regarding the logistical function, addressivity was also a useful strategy for allocating turns, forming groups, or getting a student's attention.

To sum up, the teacher mainly used addressivity in the procedural context for logistical or technical purposes such as organizing the learning environment -dealing with issues such as forming groups or organizing the spatial layout (Wigham, 2012)-, or dealing with technical problems. On the other hand, there was a lower rate of addressivity with a task function, which mirrors Peterson's (2008) findings.

7.1.1.3. Addressivity in two class activities.

Students did not use addressivity during the discussion task. This may be due to the fact that the discussion was lead by the teacher, who was controlling the interaction and allocating turns through directed questions when there was student silence. However, students did use addressivity during the guided tour task. They used this strategy to call someone's attention and to organize their speaking turns, as it was a group-led activity.

Teacher instances of addressivity were found in both tasks in a similar proportion. During the discussion activity, most addressivity turns had a task function and the main purpose of addressivity was to allocate turns for participation, elicit input through directed questions, acknowledge turns and provide positive feedback. On the other hand, the main function of the addressivity turns in the guided tour was logistical. In this task, addressivity was used to prompt students to start the task or to call someone's attention.

Overall, the guided tour task had a wider range of addressivity functions than the discussion activity, as there were logistical, technical, and task-based uses of this strategy, while there were no logistical uses during the discussion activity. Nevertheless, there were also common uses of addressivity such as input elicitation, channel checks and repetition requests. The difference in addressivity functions could be due to the different nature of the tasks, the first activity was led by the teacher and her function was to elicit input from the students, whereas the tour was led by the students and the teacher performed a more managerial role.

7.1.2. 'I'm here': Feedback Markers in a MUVE class.

In the present data, feedback markers were the most frequent transactional strategy used by the teacher and the student, which aligns with Peterson's (2008) findings. Feedback markers in this study accounted for 22.4% of the total teacher turns.

This strategy was found in all classroom contexts; however, it had a relevant presence in the fluency classroom context. This context had different types of feedback markers: acknowledgement, continuers, assessment and non-verbal markers such as laughs. Most feedback markers in this context were acknowledgements and they had a task function. The aim here was to show presence and understanding unobtrusively, and acknowledge a student's contribution. Continuers were also frequently used to display understanding and encouragement for the student to follow. The teacher used assessment markers and laughs with the purpose of showing not only presence but also interest in the content of the student's message. Assessment markers and laughs contributed to create a more natural conversational environment as well as achieving common ground, by displaying an affective response and reacting in a spontaneous way similar to a natural conversation and sharing humorous remarks. These markers were used to establish mutual understanding and a feeling of co-presence among the participants (Cherny, 1995, p. 2).

In the procedural context, the only feedback markers found were acknowledgements. Feedback markers were useful for logistical purposes such as agreeing on the next location as well as acknowledging students' confirmations after comprehension checks. They were also useful for the technical aspect of the lesson, to confirm a student's audio and microphone was working or to confirm that a student has sent a notecard or performed a technical action in *Second Life* correctly.

To sum up, feedback markers were an important strategy to compensate for the paucity of nonverbal cues. This strategy was used to keep the channel of communication

open, to signal presence and understanding of the ongoing interaction (Cherny, 1995), and to provide encouragement for a speaker to continue (Foster & Ohta, 2005). Feedback markers also had an interactional function, they were used to display an affective response to the content of the learners' utterances, thus contributing to create a positive online community (Rourke, Anderson, Garrison & Archer, 1999), to achieve intersubjectivity, and foster participation (Cherny, 1995; Peterson, 2008).

7.1.2.1. Feedback markers in two class activities.

Most feedback markers used during the discussion activity were acknowledgements and had the aim of showing presence and understanding. 25% of the teacher feedback markers in the discussion task were accompanied by positive feedback statements. Using a positive feedback statement contributed to create a comfortable learning environment to encourage the students to participate.

There was a much higher occurrence of teacher feedback markers during the guided tour compared to the discussion task. Although acknowledgement markers were also frequently used, the most popular feedback markers during the guided tour were continuers. There were also markers of assessment and laughter found, which contributed to create a more comfortable environment.

As with addressivity, the different type of feedback markers in each task had to do with the nature of the task. In the discussion task, the teacher used feedback markers to acknowledge student contributions, whereas in the guided tour, students had to deliver longer presentations, and the teacher used continuers as an unobtrusive way to signal their right to continue.

7.1.3. BRB: Timesaving Devices in a MUVE.

Contrary to many reports in SCMC regarding the abundance of time-saving devices (Werry, 1996; Cherny, 1999; Murray, 2000), this strategy was seldom used by the teacher

and by the students in the present data. This finding corroborates Peterson's (2008), who also found very few timesaving devices in his data. Like Peterson (2008), the only timesaving devices found were abbreviations and acronyms. One possible explanation is that students did not engage in fast-paced long strings of written text so they may not have found it necessary to use time-saving devices to keep up with interaction as is reported in SCMC literature (Peterson, 2008). Another possible reason is that these students were not proficient enough in English to use timesaving devices and were maybe not familiar with timesaving conventions in their target language. This hypothesis is supported by the fact that students used more abbreviations in their L1 than in the target language. Moreover, this world being a multi-channeled one, participants could make use of the audio channel as a more efficient channel to deliver longer turns and thus save time. This is the most likely reason to account for the almost inexistent use of timesaving devices by the teacher, as the teacher's main mode of communication was the oral channel.

7.1.4. 'Do you need a teleport?': Technical help in a MUVE.

There were numerous instances of technical help found in the data, this strategy accounted for 11.2% of the teacher's discourse. The present data shows that the teacher made use of technical help strategies in three instances: to give instructions to the whole class about how to use the *Second Life* environment, as a reaction to student appeals for help or as a reaction to sound problems that interfered with communication. All of these uses had a relevant presence in the data, but almost half of the instances of technical help were triggered by student appeals for help.

As expected, the main classroom context for technical help was the procedural context, as many instances of technical help were related to instructions or sound checks. Most instances of technical help concerned sound or microphone problems. Thus, the use of

Second Life's voice feature, although essential for a foreign language class, caused many communication breakdowns during the class.

There was a tendency for the instances of technical help to decrease throughout the course, which shows that familiarization with the environment had an important effect on the amount of technical help turns used in the class. Participants needed several hours in *Second Life* in order to overcome the technical learning curve and get familiarized with the basic navigation skills. We can observe in figure 18 of chapter 6 that the instances of technical help went down in module 3, in other words, when the students had had around six hours of exposure to *Second Life*. This finding illustrates the need for several technical familiarization sessions for the teachers and the students before starting the course (Deutschmann & Panichi, 2009; Dudeney & Ramsay, 2009; Molka-Danielsen, Richardson, Deutschmann, Carter, 2007; Sweeney et al, 2010).

7.1.4.1. Technical help in the lesson.

Concerning the channels through which technical help was provided, Hampel & Sticker (2012) found that the audio channel was used as the main tool for technical issues at the beginning of the tutorial, but the text chat was used to deal with technical issues at other points in the session and was at times used as a back-up channel when a student's audio channel was not working properly. This study shows similar findings as students also used the text channel as a backup channel when encountering technical problems. Furthermore, most instances of technical help in general instructions were delivered through the voice channel, however, when students had sound problems or needed technical help, the teacher used the voice or text chat, depending on the situation. The teacher used the text chat for technical help at times to avoid interrupting the flow of the conversation, as Hampel and Stickler (2012) reported, and other times it was used to scaffold instructions by providing step-by-step instructions.

The degree of technical help throughout the sessions was irregular. As students got more familiar with the environment, technical instructions and technical appeals for help did decrease, for example, there were no occurrences of teacher technical instructions in the last sessions in which the students presented their final task. This could be due to the fact that students were in the leading role as they were the guides, so they were in charge of giving all the needed instructions. Nevertheless, in figure 18 of chapter 6 we observe that sound problems were a recurrent issue throughout all the sessions. Sound problems were not directly related to the degree of familiarity with the environment, they had to do with external issues such as quality of the microphone or computer and Internet bandwidth. Hence, teachers should expect the presence of meta-environment discourse throughout the course as there is always going to be a certain degree of technical uncertainty when multimodal channels, especially voice, are concerned (Cunningham et al, 2010).

There were *Second Life* skills which proved more challenging than others and needed more technical turns devoted to helping students, therefore, it is important to take into account all the *SL* skills needed for each task as well as the instructions and technical help that needs to be provided when planning and designing tasks.

Regarding the degree of technical help in the two activities that were analyzed, the discussion activity hardly registered any instances of technical help, probably because this activity was not technically complex as it was a static activity that involved no location changes. The guided tour, on the other hand, registered the presence of technical help, which was used to deal with technical issues that appeared during the guided tour.

Overall, technical help was an important strategy to ensure the smooth communication (Condon & Check, 2010; Cunnigham et al, 2010) and navigation of the environment to be able to carry out the tasks. It also illustrates one of the roles that the

foreign language teacher has in a virtual environment: that of technical supporter (Wang, 2015).

7.1.5. 'Can you hear me, Keisha?': Channel Checks in a MUVE.

Cunningham et al (2010) state that "multimodal communication is vulnerable to breakdowns" (p. 150) and this results in meta-modal discourse, as participants are aware of this vulnerability. Thus, it is not surprising that the teacher in this study employed many channel checks, as the teacher needed to ascertain that the students' communication tools were working or help them if necessary to ensure the smooth running of the class.

Channel checks had two main functions: check for student input, that is, check that the student could hear the rest of the participants, and check for student output, ensure that the student's microphone worked.

The majority of channel checks were found during the procedural classroom context. This was to be expected as channel checks were used for classroom management purposes, the teacher needed to check if there were any technical issues at the beginning of the class or deal with them during the class.

Most channel checks contained explicit addressivity. One possible reason why directed checks were preferred could be because it was a more effective way of ensuring that the message was received by the intended recipient. Also, the aim of the channel check was to know whose sound was working and whose was not, so including the intended addressee was essential. General channel checks were more abundant during the first sessions when checking for each individual's sound would not have been feasible due to the high number of students, however, after the first session, when the group was split into two, directed channel checks were more predominant. The most likely reason for the preference for individual channel checks was that the smaller group number made it more feasible to make individual channel checks and directed channel checks increased the likelihood of student response.

Most directed channel checks contained the name at the beginning of the turn. A possible reason for this could be that by using the learner's name at the beginning of the turn the sender could get the addressee's attention from the beginning of the utterance and, thus, maximize the likelihood of the intended addressee receiving the message.

Most sessions had between 1 and 11 turns devoted to channel checks. However, there were three sessions that had more than 20 turns per session devoted to channel checks. The sessions that had the highest rate of channel checks were the ones in which students had most sound problems. Most of these problems were related to the microphone and the students' sound output, which affected the final sessions of the module especially, because the tasks were designed to be carried out through the oral channel.

Although there were channel checks throughout the duration of the session due to technical problems, most channel checks happened during the first fifteen minutes of the class. This fact illustrates that channel checks were part of an established greeting routine in which the teacher needed to check that the students' communication tools were working properly. This finding confirms Wang's (2014), who reports the use of social formulas and teacher questions such as 'how are you today?' at the beginning of the class as a strategy for establishing social cohesion and for testing the student's audio at the same time. Also, most channel checks were directed because channel checks were done individually and progressively, as students arrived at the class.

It is also relevant to point out that 20% of the channel checks involved self-repetitions, which were triggered by a student's silence or non-response. Most of these self-repetitions were directed and involved an oral to text channel switch. Thus, if a routine channel check did not trigger a student response, the teacher used more explicit means such as addressivity and the written channel to increase the likelihood of receiving a confirmation.

To sum up, channel checks were an essential transactional strategy used especially during the greeting stage at the beginning of the class (Wang, 2014) to prepare the technical conditions to carry out the class and minimize the chances of having communication breakdowns during the class that would disrupt the running of the class. During the session, this strategy was also used to deal with communication breakdowns and to detect possible sound problems with students who were not participating actively. Apart from the technical function, they were also used at times as a means to elicit input from quiet students and encourage them to participate.

7.1.5.1. Channel checks in two class activities.

There were very few channel checks during both activities. The channel checks found in the discussion activity were for used for input elicitation purposes. Some students were silent during the discussion, so the teacher engaged in channel checks to make sure the students' sound was working properly and to get the students to participate more actively in the discussion. Regarding teacher channel checks during the guided tour, there were technical problems with the environment towards the end of a session, which caused some sound disruption and triggered channel checks.

Although the data shows a high number of channel checks, few occurred during the task stages of the lesson.

7.1.6. Gifting in *Second Life*: Checking and acknowledging reception.

Although more reception checks were expected, there were only a total of ten, seven of which were made by the teacher and three by the students. A possible reason to account for the few reception checks was because the *Second Life* interface has an easy drag and drop system to share notecards or landmarks and the user gets a system notification message when an avatar receives the item. However, although the teacher gets a reception notification, it does not ensure that the students know how to find the object in their inventory. Furthermore,

the teacher only receives notifications for the objects that she has transferred, she cannot see if a student has opened a notecard or activated an object received from the inventory. Also, the presence of reception checks will depend on the nature of the task and the materials needed. In this study, the teacher did not have to transfer many notecards to the students.

Half of these reception checks were triggered by a student's appeal for help or by a student's clarification request. This triggered a reception check to ensure that the student had received the material correctly. The other half of the occasions, the teacher may have engaged in reception checks at times when she was handing out notecards to a group of students and wanted to make sure she had not missed anyone or, as mentioned in the previous paragraph, she might have wanted to ensure that everyone had found the object in their inventory.

There were no reception checks found during the discussion activity. This was because during discussion activities, there was usually no notecard or object handed out, so this strategy was unnecessary. Similarly, the guided tour activity triggered no student reception checks and only two reception checks by the teacher, who was ensuring that a student had received the teleport links correctly to move on to the next location of the tour.

Thus, reception checks were not found during the task stages of the session, they were found during procedural contexts as they had a logistical function, i.e., to ensure that students had received the material.

Other times, it was the teacher who was the recipient of gifting. When the teacher received a notecard from a student, she always engaged in reception confirmations to confirm that she had received notecards that the students had sent her. There were three types of teacher reception confirmation found in the data: praise, thanking, or praise and thanking together. The most frequent reception confirmation strategies were made up of a praise and

thanking expression plus the student's real life or character name. This strategy was used to show presence and to make a personal confirmation to the student.

Teacher reception confirmations were only found in the two sessions in which students had to hand in a notecard by the end of the session. Students engaged in reception confirmations mainly as a reaction to the teacher's reception confirmation checks.

There were no reception confirmations found during the discussion activity and there was just one found during the guided tour by a student. This may be due to the nature of the activities. Students were rarely asked to send notecards to the teacher. In the cases when they were asked, some students had problems and sent her an email instead, so there were very few cases of teacher reception confirmation.

7.1.7. 'Who is speaking?': Identity Check.

Although the visual environment can help reduce ambiguity (Naper, 2011) regarding who is speaking, when there were several avatars close together, it was sometimes difficult to know who was speaking. The teacher had to engage in twelve identity checks, which consisted of asking who the speaker was, followed by a participant's name. Nevertheless, the frequency of identity checks was very low, which leads to the possibility that the visual environment played a role in reducing ambiguity. One of the strategies to reduce ambiguity using the visual mode is visual addressivity, which will be discussed in section 7.5.4.3.

7.1.8. Interface management.

The actions that the teacher performed on the interface were grouped intro three categories: (1) actions on the *Second Life* interface, such as inventory management, (2) interaction with the in-world graphic environment of *Second Life*, (3) interaction with the participants. The most frequent use was to manage the *Second Life* interface (53%), followed by interaction with the participants (32%) and in the last place, interaction with the graphic environment (14.7%). Thus, these three dimensions played a role in teaching in *Second Life*,

but the most important was the management of the interface, which included notecard arrangement, inventory searches, camera controls and window management. These dimensions can be taken into account when designing teacher-training courses in *Second Life*.

7.2. Interactional Strategies

The second type of discourse management strategies found in the data was interactional strategies. The interactional strategies that will be discussed in this section are praise, agreement, inclusive forms, humor, MUVE talk, character names, paralinguistic strategies, greetings and leave takings and apologies.

7.2.1. 'Good job!': Praise.

Praise was the politeness strategy that had the highest presence among the interactional strategies found. Addressivity was often used in praise, out of the 141 instances found, 47 included the students' name.

Most instances of praise were found in the fluency context and had a task function. The teacher used praise mainly to give positive feedback on the students' contributions. There were also some instances of praise found in the procedural context. Here, the main function was technical. In this context, praise was used to acknowledge that a student had performed a technical action correctly.

Praise had slightly different functions in the discussion and guided tour. During the discussion activity, praise was used to provide positive feedback to promote participation. On the other hand, during the guided tour the main function of praise was not to promote participation, as the students were delivering a presentation, it was used to provide positive environment and to acknowledge and encourage the students to continue.

To sum up, praise was used to promote the development of a community and provide a supportive atmosphere as well as encourage student participation (Lapadat, 2007).

7.2.2. 'Yes, you're right': Agreement.

Agreement was a strategy that had a task function and occurred mainly during the fluency classroom context of the lesson. Most instances of agreement occurred during warm-up and closing discussions in the first place, and during students' final tasks in the second place.

This strategy was rarely used during the discussion activity that was analyzed. During the guided tour, the instances of teacher agreement found occurred in the discussions after the guided tour or when there was a question during the tour. During these stages, the teacher was taking on the role of tourist, so by using the strategy of agreement, she was trying to establish common ground with the students.

Overall, agreement was a positive politeness strategy used to express common values, thus establishing intersubjectivity (Darhower, 2002). This finding supports Peterson's (2008) who also found expressions of agreement in his data as one of the positive politeness strategies used to establish common ground.

7.2.3. 'Where should we go now?': Inclusive Forms.

The third interactional strategy found was the use of inclusive forms. Inclusive forms were found in the fluency and procedural classroom context in equal numbers.

Regarding the fluency context, the main function of the inclusive forms found in the data was to signal in-group status, confirming Peterson's (2008) report. Apart from signaling in-group status, inclusive forms were useful to differentiate stages in the class and signal when the teacher was playing a different role to the teacher role. By using the inclusive forms *we* and *us*, she was emphasizing an inversion in roles, she was performing a student or tourist role, whereas the students who were guiding were playing the lead expert role.

Regarding the procedural context, inclusive forms were also used as a politeness strategy to minimize the force of imperatives and for other procedural purposes such as

waiting for all the students to get to a location before starting an activity or dealing with technical problems. Using inclusive forms for procedural functions, also contributed to creating a feeling of community.

There was no evidence of inclusive forms used by any of the participants during the discussion activity. The teacher, on the other hand, made frequent use of inclusive forms during the guided tour. This was probably due to the fact that the teacher and student role, which was clear in the discussion activity, had been reversed in this activity and the teacher was playing a different role to the expected teacher role. Thus, she used the inclusive form 'we' more often in her interventions to remind the participants of this change.

To sum up, inclusive forms were used as a positive politeness strategy to signal in-group status (Brown & Levinson, 1987; Lapadat, 2007; Peterson, 2008), thus placing the teacher and the student in the same role (Morand et al, 2003) as well as a strategy to create a feeling of online community and social cohesion (Rourke, Anderson, Garrison & Archer, 1999). In this data, not only was this strategy useful to signal in-group status, but it also helped showcase the switch in roles for certain activities in the class.

7.2.4. "One gintonic please xdxd": Humor And MUVE Talk.

There were no instances of teacher-initiated humor found in the data, however, there were instances of laughing as a reaction to humorous situations that happened in-world or funny comments made by students. Teacher laughs occurred mainly through the voice channel, but she also used the text chat twice to indicate laughter. The teacher used laughing as a strategy to create a relaxed and friendly atmosphere and enhance the social cohesiveness of the community (Darhower, 2002). Some of the humorous remarks that the students made were in their L1, which differs from Darhower's (2002) results, who reports students using the target language for humor.

Despite the lack of humorous remarks found in teacher discourse, the teacher did engage at times in small talk, especially at the beginning or end of the classes. Most of the small talk found was related to the MUVE environment. Half of the instances of MUVE small talk were used to encourage students to interact with the in-world objects in the environment and the other half were talk about non-task-related objects or locations that were found in the world.

There was hardly any off-task discussion. This is probably due to the fact that students tend to engage in off-task discussion when the teacher is not present (Darhower, 2002). This data, is based on the recordings made by the teacher from her computer, so there is no evidence of what students talked about when they were doing group work on their own.

Hampel & Stickler (2012) found that students engaged in off-task discussions, which took place often in the mode that the teacher was not using, usually through the text chat. In the present data, the main channel for the class was the audio channel. Most instances of student humor were found in the text chat, confirming Hampel and Stickler's (2012) finding. A possible explanation is that students identified the voice channel as the formal academic channel through which the class took place, whereas the text chat allowed for a more playful type of interaction and asides that did not interfere with the development of the class.

There were no instances of teacher or student humor or MUVE talk during the discussion activity. However, some instances were found during the guided tour. This fact is related to where the activities took place in the MUVE environment. During the discussion, students were sitting in the same place as in every class: on a carpet in the CETT island. While the proxemics layout of the students sitting in a circle on the carpet contributed to create a sense of community, the place was familiar to them and did not generate any remarks. During the guided tours, however, there were frequent location changes and there was an element of surprise, the students did not know what they are going to encounter in the

next location. Furthermore, the guided tours were activities that were carried out in public locations in *Second Life*. Both these factors caused some funny or unexpected situations that triggered laughs, MUVE small talk and joking comments from the participants. This contributed to create a relaxing atmosphere and to generate interest and awareness of the MUVE setting as a special learning environment.

Overall, small talk, humor and laughs were found to develop a sense of social-cohesion and community as well as create a comfortable atmosphere (Darhower, 2002). Furthermore, MUVE talk contributed to develop a sense of co-presence and spatial awareness of this online environment.

7.2.5. 'Keisha, hello!': Character Names.

Morand et al. (2003) identify the strategy of first name or in-group name as a politeness strategy to achieve familiarity. Peterson (2008), adapting Morand et al's (2003) strategy, identifies the use of character names as a MOO interactional strategy to establish identity and presence, which is necessary for communication in this online environment. The use of character names was also found in the present data.

Surprisingly, in this study many students chose not to change their first name; only three out of nine students chose to change their first name and adopt a character name. Furthermore, students rarely made use of character names to address their peers. This fact shows that the students were not engaged in creating a virtual persona for themselves or willing to experiment with the playful nature of the environment. This is probably due to the fact that all the students were classmates and already knew each other. The results could be different if students had not been acquainted with each other before. Peterson (2008) also noted that some of the students in his data chose to use character names and others did not, however, unlike in our study, the majority of his students did adopt character names.

Although the teacher did use character names with the students who had changed their names, she preferred to use their real life names. Again, this could be due to the fact that the teacher was already acquainted with the students, as she was currently their teacher, so they had a teacher-student relationship at the university. Using another nickname to address students in *Second Life* might have seemed odd or might have sounded artificial.

Nevertheless, the teacher tried to acknowledge and use the students' character names, at times. The teacher probably used character names as a strategy to help students get into their online persona as well as a strategy to achieve in-group familiarity (Morand et al, 2003) and co-presence (Peterson, 2008). However, it might be difficult to engage in virtual identities when the participants already know each other and have a relationship outside the virtual environment.

7.2.6. "paulaaa???": Paralinguistic Strategies.

There were few paralinguistic strategies found in the data. The only paralinguistic devices found were some instances of uppercase and emoticons. However, the numbers are purely anecdotal. The paucity of paralinguistic strategies could be due to the fact that these strategies appear in text chat. The teacher did not use the text chat often, and, when she did, did not use long turns.

Peterson found instances of uppercase used "for emphasis and to attract attention" (2006, p. 147). In this study, only six instances of teacher use of uppercase were found, and all of them happened in the first session. The teacher might have used this strategy for emphasis, to attract the students' attention, and as a way of separating her turns from her students' turns for clarity purposes. A reason why the teacher did not carry on using this strategy in latter sessions could be that there were many participants during the first session and this caused some confusion. As a result, the group was split into two in the latter sessions. Due to the decrease in class size, the teacher may have not found it necessary to use

uppercase any longer. Another possible explanation for the disappearance of uppercase is that uppercase can also be considered loudness or shouting (Negretti, 1999). The only other paralinguistic strategy that the teacher used was the smiley emoticon. However, it was only found on three occasions.

There were instances of student exclamation marks found in the data, which were used to complain, ask for help, show enthusiasm or call someone's attention. However, there were no instances found of teacher exclamation marks. As with uppercase, text chat users have to be careful with the use of exclamation marks as it can be perceived as shouting or associated to feelings of anger (Negretti, 1999).

7.2.7. "Hello Co, can you hear me?" Greetings And Leave Takings.

The present data shows that there was a greeting and leave-taking routine in every session. Directed greetings were more usual than general greetings. This is probably due to the fact that the teacher was usually the first participant to be in *Second Life* and, as the students arrived, she would greet them individually. The generic greetings were usually addressed to the class as a whole and did not happen at the beginning of the class, they happened after a teleport or when the teacher visited the groups during group work.

Most directed greetings would often be followed by a channel check, as seen in section 7.1.5. There were some cases in which the channel check was embedded in the greeting routine covertly by asking a student how they were. This finding corroborates Wang's (2014) who found that teachers in a virtual world used the social greeting routines at the beginning of the class as channel checks to make sure everyone's sound was working properly.

Most leave takings, on the other hand, were general, because, unlike greetings, the teacher did say goodbye to the group as a whole, rendering the use of names unnecessary.

Thus, teacher's greetings and leave takings were used to establish social cohesion (Goffman 1963, Darhower, 2014; Wang 2014), to create a friendly and polite sense of community (Darhower, 2014). Furthermore, greetings were used to carry out technical checks to ensure the smooth running of the session (Wang, 2014).

7.2.8. Apologies.

There were few instances of negative politeness in the present data. This could be due to the fact that negative politeness strategies are used to establish a distance from the interlocutor. In this context, however, the participants already knew each other.

Nevertheless, there were some instances of negative politeness found in the data. The teacher expressed negative politeness through apologies. These apologies were used to ask for repetition due to students' technical sound problems or to apologize for the teacher's own technical problems or interruptions. This finding corroborates Peterson's (2008) who found few instances of negative politeness and most of them were apologies.

There were no student apologies found during the discussion activity. The teacher used apologies five times and all of them were caused by a technical sound problem. The purpose of the apology was to ask for repetition.

Both student and teacher apologies were found during the guided tour. As before, most teacher apologies were triggered by technical problems. The students, on the other hand, made two apologies. One was a repetition request and another was an apology for making a mistake.

7.3. Teacher Interactional Modifications

In this section two types of interactional modifications will be discussed, negotiation modifications and self-repetitions and reformulations. The modes used in each type of modification will also be analyzed.

7.3.1. Negotiation devices.

The teacher engaged in three negotiation strategies in the data to ensure understanding and maintain the communication flow with the students: clarification requests, confirmation checks and comprehension checks.

There were few clarification requests found in the data. Peterson (2008), however, found a high use of clarification requests used by learners in a MOO; he reports it was the second most frequent negotiation strategy, after appeals for help. Lee (2002) also reports clarification requests a one of the most used strategies by foreign language students in CMC after comprehension and confirmation checks. However, this study reports similar results to those found in face-to-face contexts such as Long and Sato (1983) and Pica and Long (1986) who compared the teachers' use of comprehension checks, confirmation checks and clarification requests, and found that clarification requests had the lowest frequency. Thus, there could be different findings regarding the frequency and type of negotiations when the subject of the negotiation strategies is the teacher and not the learners (Allwright & Bailey, 1991).

Most of the clarification requests the teacher engaged in occurred during the discussion activities that took place at the beginning of the session, during the warm-up discussions. Half of the instances were task-oriented, followed by the technical function. The teacher, apart from asking for clarification during the task, also needed clarification from students when they encountered technical problems. According to Walsh (2012) clarification requests are 'extremely valuable in prompting opportunities for learning since they 'compel' leaner's to reformulate their contribution, by rephrasing or paraphrasing.' (Walsh, 2012, p.10). Thus, technical problems also served as an opportunity for students to engage in rephrasing of their output. The predominant student reaction to the clarification requests was output modification, confirming Walsh's (2012) finding.

Confirmation checks, the second negotiation strategy, were more frequent than clarification requests in this study. Half of them took place during the fluency context, followed by the procedural context.

Half of the confirmation checks in the fluency context had a task function and were used for clarification purposes, to express interest or surprise, or to confirm the meaning of a student's message. There were also confirmation checks found with a logistics function aimed at confirming the next student to hold the floor or the next location during a tour. The second classroom context with more confirmation checks was the procedural context. Most confirmation checks here had a technical function and were related to sound problems. When there was a technical problem, the teacher sometimes used confirmation checks as stalling strategies to gain time to think of possible ways to fix the problem. In the task-oriented context, confirmation checks were often used after an appeal for help for a lexical item, to confirm that it was the desired lexical item.

There were confirmation checks found in both tasks, but there was a higher number of confirmation checks during the guided tour. They were used for different purposes such as guessing what a student was saying, expressing interest, or asking for clarification.

Confirmation checks were used as a popular teacher modification strategy to confirm and check the meaning of a student's utterance. Furthermore, it was a strategy used to help the flow of the interaction (Walsh, 2014) and avoid misunderstandings both at a technical and at a meaning level.

The third negotiation strategy was the comprehension check. Comprehension checks were the most frequent negotiation strategy found in the data. Most of them were found in the procedural classroom context.

Comprehension checks had a very high density in instructions, 34% of the teacher instructions contained a comprehension check. Most comprehension checks in the procedural

context had a logistics function and were used to ensure that the students were following the class. Some checks were used to seek student confirmation or understanding of classroom management issues such as location changes, turn and time management. There were also comprehension checks with a technical function related sound issues or use of the *Second Life* interface.

Many of the comprehension checks consisted of one word checks such as 'ok?'. When these checks were found in the middle of the turn, they often served more as fillers rather than actually checking for comprehension, as the teacher did not provide interactional space for the students to provide a confirmation. However, when the checks were placed at the end of the teacher's turn the teacher provided a space for students to confirm their understanding.

This strategy was not very present in the task classroom context, however, it played an important logistics role in instructions and other procedural issues, to ensure that the students were following the class (Walsh, 2014), to elicit assurance from the learner (Chaudron, 1988), and, thus, avoid misunderstandings.

Overall, clarification requests and confirmation checks served mostly a task or form-focused function. On the other hand, comprehension checks, although greater in number, served mainly a logistical and technical function. Furthermore, many comprehension checks served as fillers and did not check for understanding. Moreover, clarification requests and confirmation checks were more successful at pushing student output whereas comprehension checks just triggered confirmations of understanding. Comprehension checks, however, were an important backchanneling strategy to ensure understanding and following of the flow of the class, as the environment lacked the nonverbal cues present in face-to-face contexts that can help the teacher know whether the students are following the class.

7.3.2. Self Repetition.

Self-repetition was the most prominent teacher modification strategy found in the data. There were instances of self-repetition across all the classroom contexts. Most self-repetitions (73%) involved a channel switch, usually from the oral to the text channel. Thus, the text channel was used as a repetition channel, complementary to the audible channel, used to clarify and reinforce what was said through the audible channel.

The most prominent classroom context for this strategy was the fluency context. Most of the self-repetitions had a task or form function and were used for modeling purposes. Self-repetition used for modeling purposes frequently contained a switch from the oral to the written channel. Self-repetitions with channel switches in the fluency context were used to acknowledge answers that students had given (as would be done in a face-to-face classroom with a board), model important words for a task, or rephrase a student's utterance and model the correct form. Thus, the text chat in this context was used as a transfer strategy from face-to-face classes as it was used as a board, for all the participants to see.

The second context with the highest number of self-repetitions was the procedural context. In this context, most self-repetitions had a logistics or technical function. Regarding the logistics function, the teacher used self-repetitions when forming groups, when repeating questions if there was no response, or when repeating instructions. The teacher used self-repetition with a technical function for sound checks or to help students who were having technical problems. Again, channel switches had an important presence in the procedural context: they accounted for 49% of the self-repetition with a logistics function and for 67% of the technical self-repetitions. The high density of technical self-repetitions in this context could be because if the trigger of the self-repetition concerned a technical problem, using the text chat would ensure that the student would receive the message. Most self-repetitions in instructions were of a technical nature and 72% of them involved a channel switch. Thus, the

text chat was an important feature of technical self-repetitions. This fact can be explained because it was easier for students to follow instructions in the written chat, as the pace was slower and they could go back to the text chat if needed. Furthermore, the text chat can be used to provide scaffolding by sending instructions in several turns. Thus, the staging of instructions aids comprehension and also lets the teacher know what parts students are struggling with.

Most self-repetitions during the discussion activity took place through the text chat. The teacher used repetitions to model new words, provide corrective feedback or as an unobtrusive backtracking strategy for students who were having sound problems. Likewise, during the guided tour, 76% of the self-repetitions had a channel switch. Self-repetitions were used as a compensatory strategy to repeat important information a student had given, to clarify what a student who was having microphone problems had said, or as a reaction to a repetition request. They were also used as a backup strategy as a way of ensuring that the message was received when students were having audio problems.

Self-repetitions were used to avoid communication breakdowns (Ellis, 1984; Chaudron, 1988) and helped students who got lost due to comprehension or technical problems. Furthermore, the multi-channel feature of *Second Life* allowed the teacher to use the text chat as a complementary or compensatory channel to the audio channel to help students 'navigate' the discourse (Walsh, 2014) by clarifying or reinforcing the audio channel, sequencing technical instructions, and using the text chat as a board. Thus, self-repetitions, often combined with text-chat, helped the students follow the class.

7.3.3. Self-Reformulation.

Self-reformulations had a much lower incidence than self-repetitions. The teacher also engaged in channel switches, but they were not as frequent as with self-repetitions, 17 out of the 52 instances of self-repetition found had a channel switch. Although some switches here

were used for modeling purposes most of them were logistical and were used to repeat instructions through the text channel to ensure that all the students had received the message.

Self-reformulations in the fluency context were triggered by student silence or by repetition or clarification requests. There were also self-reformulations in the procedural context, most of which had a logistics function. Many self-reformulations here consisted in rephrasing or simplifying instructions.

Self-reformulations were used as a teacher modification strategy to simplify the teacher's discourse. This strategy was triggered by students' appeal for help, repetition requests or silence. As with self-repetitions, this strategy helped the students follow the class (Walsh, 2014).

7.3.4. Teacher modification strategies and modes.

In this section, the different teacher modification strategies will be discussed in light of the modes used with the goal of observing if the multi-channel environment was used in teacher modification strategies.

The negotiation strategies were eminently carried out through the oral channel. Thus, in this case, the multiplicity of channels in the MUVE environment did not play a relevant role in negotiation strategies.

On the other hand, the strategy of self-repetition showed interplay between the audible and the textual mode. 60% of the self-repetitions were carried out through the text chat. Thus, the textual mode was very prominent in this strategy. Furthermore, this strategy displays interplay between the oral and the text mode as 73% of the instances involved a channel switch. The text channel was used as a complementary channel to the voice channel and was used mainly for modeling purposes. The text channel also served as a compensatory channel, emulating the board that classrooms have in face-to-face contexts. Hence, the multi-channel nature of the MUVE was exploited in self-repetitions.

In self-reformulations both the text and the voice channels were used, however, the voice channel was more prominent, as 35 out of 52 self-reformulations were carried out through the voice chat. The text was used to summarize instructions for students who were having technical problems, to provide synonyms to words, and to reformulate questions that were formulated in the oral channel. Thus, there were also instances of interplay between the text and the oral modes. Furthermore, as with self-repetitions, the text channel was used firstly as a compensatory channel for students who were having technical problems, and, in the second place, to emulate a board in a face-to-face classroom.

7.4. Corrective Feedback

Teacher corrective feedback accounted for 3.2% of the total of the teacher turns. This low rate has yielded similar results to Bower & Kawaguchi (2011) who report a 0.6% rate of corrective feedback in the English sessions and a 3.3 % in the Japanese sessions of an online tandem project. The low rate in the present study is probably due to the high number of procedural turns found in the data that were not related to the task.

7.4.1. Types Of Corrective Feedback.

There were 83 occurrences of teacher corrective feedback strategies found in the data. Concerning student feedback, there were 15 instances of self-correction, however, no peer correction was found.

The most predominant type of corrective feedback was recasts, which accounted for 72.7% of the instances of corrective feedback. Recasts were seen as a strategy to provide feedback in a face-saving way and it was also a strategy to avoid interrupting the flow of the interaction (Wigham 2012).

Other strategies of implicit corrective feedback were seldom used in the present data. This finding contrasts with other online studies that report a high number of negotiation strategies among learners when providing corrective feedback. Morris (2005) found that the

most typical type of repair in young learners of Spanish were negotiation strategies. Bower & Kawaguchi (2011) found no recasts during the Japanese online sessions. Similarly, Kötter (2003) found few recasts in his study. Kötter (2003) points out that the lack of recasts might be due to the fact that in tandems, users do not want to come across as more proficient than the other, so they have a preference to engage in negotiation of meaning strategies. While these reports are related to tandem learners, the results could be different when examining the teacher's and not the learners' use of corrective feedback. In fact, Wigham (2012) reports recasts as the most prominent strategy that the teachers used, while negotiation strategies had a much lower presence, corroborating the results in the present study.

In the present data, there were no instances of explicit corrective feedback. This result is consistent with other studies, which report a low presence of explicit corrective feedback. Morris (2005), for example, found no instances of explicit corrective feedback, and Bower and Kawabuchi (2011), Lee (2006) and Wigham (2012) found very few instances of explicit feedback.

7.4.2. Trigger for corrective feedback.

In the present data, the teacher focused on both grammatical and lexical non-target-like utterances, in similar numbers, although the grammatical trigger was slightly higher. There was also a frequent use of L1-triggered feedback. This finding is in line with Sotillo (2005) who found that the predominant errors that triggered corrective feedback both in NS-NNS and in NNS-NNS dyads were grammatical, lexical and spelling. However, several studies (Tudini, 2003; Pelletieri, 2000; Blake, 2000; Smith, 2003) report that corrective feedback focused on grammatical and lexical non-target-like forms, lexis being the main trigger for corrective feedback. In this study, a possible reason for the lexical trigger not being the main trigger like other studies report could be due to the fact that all the utterances that were in the students' L1 that triggered corrective feedback were coded as an L1 trigger.

Most of these occurrences were lexical because they were related to students not knowing a particular word in the target language.

7.4.3. Student response to corrective feedback.

The rate of student response to corrective feedback was very low, 64.2% of the occurrences of corrective feedback were not responded to, while feedback was responded to 36% of the times, specifically both acknowledgement and modified output had a 17.8% rate each. This finding contrasts with Wigham's (2012) results, who found that feedback was responded to on 58% of the occasions. However, she found that the student response did not lead to a high rate of modified output, which was 16%. Therefore, her percentage of learner incorporation is similar to the incorporation rate in the present data. Although Bower and Kawaguchi (2011) report a very low corrective feedback rate, their acknowledgement rate was very high, they report a 60% acknowledgement plus modification rate for the English sessions and an 81.3% acknowledgement and modified uptake rate for the Japanese sessions. Sotillo (2005) reports a 49% uptake and acknowledgement rate.

The low student response rate in this study may be due to a number of factors such as the nature of the multimodal environment, students might have been experiencing a cognitive overload because of the multiplicity of the communication channels, the novelty of the environment and their low foreign language proficiency. These factors may have caused some feedback to go unnoticed.

7.4.4. Corrective feedback and modes.

This section describes the uses of the different channels used in the verbal mode to provide corrective feedback. 60.7% of the corrective feedback was given through the audio channel, 9% took place through the text channel, while 30.3% instances were bimodal, they used both the audio and the text channels.

Negotiation feedback strategies such as clarification requests and confirmation checks occurred mainly through the oral channel, there was just one occurrence of each that was bimodal. However, the teacher displayed a more varied channel use in recasts than negotiation strategies. 27% of the total recasts were bimodal, while the other 73% occurred solely through the audio channel. The frequency of bimodal use increases in partial recasts, which accounted for 42.3% of the total instances of partial recasts. In the instances of bimodal strategies, the teacher tended to give feedback through the oral channel first followed by the text channel. The text channel might have been used as a strategy to help the students notice the teacher's recast as the text medium can make the corrective feedback more salient. Furthermore, the text channel was also used to model the correct form.

The text channel had a significant presence in partial recasts. 42.3% of the partial recasts were bimodal and 27% happened solely through the text channel. This strategy presented a balanced use of the text and oral channels. The higher presence of the text channel, compared to other corrective feedback strategies, could be due to the fact that partial recasts focused solely on the non-target like form, and the text channel was a way of providing clear and fast corrective feedback focused specifically on the non-target-like form.

Another difference between total and partial recasts was the trigger. Most total recasts were triggered by grammatical non-target like forms, while partial recasts tended to focus on lexical issues. Also, the preferred mode for total recasts was the oral channel, while partial recasts favored the written channel. Thus, the oral channel was used to incorporate the whole recast into the discourse, while the text chat was used for shorter recasts, focusing on the incorrect part of the utterance.

Overall, the audible channel was the preferred mode for corrective feedback, especially in negotiation strategies. It was also the preferred mode for recasts, which can be explained because recasts are an unobtrusive strategy to provide feedback embedded in

interaction. However, the text channel was used to focus the students' attention on a form. Also, the text chat had a special presence in partial recasts. This is possibly due to the fact that the text chat was effective for short explicit feedback, especially when the non-target-like item was lexical. The text chat helped focus on the form and model the correct form, it helped draw attention to the non-target-like utterance.

Thus, the teacher made use of the multi-channel nature of the virtual world and engaged in bimodal corrective feedback, especially in recasts, using first the audio channel and then using the text channel to focus on the form. Nevertheless, the most predominant type of feedback was monomodal oral feedback.

It is relevant to highlight that the text chat on its own, was not very present in corrective feedback. There were instances of text-based monomodal corrective feedback during the students' final task, as way of giving feedback without interrupting the students' turn. However, most instances of corrective feedback that used the text channel were bimodal.

7.4.5. Corrective feedback during the tasks

The most popular corrective feedback strategy in both tasks was the recast. There was a higher number of recasts in the discussion activity, which accounted for 87% of the corrective feedback strategies used. Specifically, total recasts was the preferred feedback strategy, accounting for 65% of the feedback strategies used. The guided tour had less recasts, however, there was a balance of total and partial recasts. This may be due to the fact that, unlike in the discussion task, where the recast was more unobtrusive and integrated in the interaction, the teacher had to interrupt the guided tour when she made a total recast. On the other hand, partial recasts did not interrupt the interaction as most of them occurred through the text channel.

The range of corrective feedback during the guided tour task was more varied. The most popular strategy again was the partial recast, but total recasts and confirmation checks were also used. Here, the student response rate was higher, as 4 out of the 5 total recasts were responded to, but only 1 out of the 5 instances of partial recasts was responded to. When corrective feedback was provided only through the text channel during a guided tour, it tended to go unnoticed.

7.5. Modes

The classes took place in a multimodal environment which had several channels and modes. The following section will discuss the floorspace and channels that the participants used as well as the strategies that put into play more than one mode.

7.5.1. Verbal mode: Floorspace description.

Both the teacher and the students displayed a shared floorspace of voice utterances and text chat turns. The teacher's turns took up most of the floorspace, as she accounted for 76% of the total verbal floorspace in the data (see tables 53 and 54 in Chapter 6). Hampel & Stickler (2012) and Stickler et al (2005) also report the tutors' dominating the voice and text chat floorspace. They point out that students tend to rely on the teacher in audio-graphic conferencing software. Wang (2014) also reports a low rate of student participation and a large proportion of silence. She points to technological issues as well as demographic and behavioral factors.

The teacher displayed a clear preference for the audio channel, as 80% of the teacher's turns were made through the audible channel. Thus, the audible channel was the default channel of communication for the teacher. One reason for this preference was found in the aim of the *Second Life* sessions. The goal of the sessions was to provide oral practice and the activities were geared towards performing oral guided tours, so the teacher used the audible mode as the main channel for communication. Another reason could be that speaking

was the fastest way to communicate and it enabled the teacher to use her hands for the interface management of the class.

The students, on the other hand, showed a balanced use of the written and the oral channels, although the text channel was slightly preferred. In fact, if we observe the audio and the text turns separately, although the teacher clearly dominated the oral chat, the students dominated the text chat (see tables 53 and 54 in Chapter 6). The students' use of the text channel was higher than the teacher's use of this channel, showing a compensation for their low participation in the audio channel (Hampel & Stickler, 2012; Wigham, 2012; Wang, 2014). Hampel & Stickler (2012) report a learner preference for the text chat, which aligns with the results in this study. There are several possible reasons for the students' preference for the text modality. In the first place, most students had technical problems during one session or more. When their microphone did not work, they had no choice but to use the text chat modality. However, students seemed to prefer the text modality anyway as there were many students with functioning microphones who used the text chat most of the times, unless requested to use the audio channel. Another reason could be that the students were low pre-intermediate students, and they might have felt shy as they struggled with fluency, thus, the text chat would serve as a compensation strategy for their low participation in the voice channel (Hampel & Stickler, 2012). These results are different from Wigham's (2012) who found different modality uses between the EFL and the FFL groups she analyzed. She found that the EFL group made frequent use of both audio and text channels, the text chat modality represented between 44% and 60% of the floor space of the sessions for the EFL group. However, in the FFL group, the text chat presented an average of only 15% of the total floor space.

7.5.1.1. Floorspace in the discussion and guided tour tasks.

As we can see in the activities floorspace table in appendix J, the teacher's turns dominated the total floorspace in both activities, in the discussion activity the teacher used up 81% of the floorspace while during the guided tour it went down to 62%.

During the discussion activity, the teacher showed a clear preference for the audible channel, as it accounted for 91% of her verbal turns. The teacher doubled the students' audible turns. In contrast, the teacher hardly used the text channels. The students in groups A and B, display a different behavior regarding turns While in group A the teacher and the student show a shared floorspace regarding text turns, group B showed a clear dominance of the written channel. While group B only took up 8.5% of the oral floorspace, they took up 83.9% of the text floorspace (see appendix J).

During the guided tour, although the oral channel was still the predominant channel for the teacher, her dominance of the voice floorspace was lower than in the discussion activity, accounting for 61%, 75% and 52.7% for each of the tours. The students, on the other hand, showed an increased use of the audible channel during the guided tours. It was expected that students would display a higher use of the audible channel, as the guided tour activity was an oral, but, although the turn numbers show a balance between the students and the teacher, the word average shows a teacher dominance. Regarding text channel use, the teacher use of the written modality went up accounting for 48.5%, 26.7% and 80% of the text floorspace respectively. Thus, during the guided tour, the teacher made more use of the text channel as an unobtrusive tool to provide feedback and for other logistical purposes.

7.5.1.2. Teacher functions and channels in the verbal mode.

The predominant function that was found in the teacher's turns was the logistical function, which accounted for 33% of the total turns. It was followed by the task (31%) and the technical (27%) functions. Thus, non-task related issues took up a surprisingly high

number of the teacher's turns. On the other hand, student turns were predominantly task-focused (38.8%), followed by logistic-focused (26.6%) and technical-focused (23.1%). The findings related to the density of the technical-related turns are similar to Wang, Deutschman and Steinvall (2013) who report that 20% of the class time was devoted to technical issues.

Wigham (2012) reports that between 54% and 59% of the EFL tutor's text turns were focused on the task. In the present data, however, only 35% of the turns were focused on the task (31% were task-focused while 4% were form focused), while the other 65% was focused on procedural functions.

The default channel used for the turns that were task-focused and procedural-focused turns was the audible channel. This channel accounted for 90% of the task turns. However, the second task-related function, the form function, had a balanced number of audible and text-based turns, although the audible turns were slightly higher. As we have seen in section 7.4 in this chapter, the text chat was often used to reinforce and model the important words that appeared in the audible channel.

Most instant messages had a logistics or technical function. The technical function registered the highest number of IMs and the highest rate of text-based turns with a non-task function. When there were technical issues, IMs proved successful to deal with the technical problem in a private way without interrupting the class flow. The public text chat also registered a high use regarding the technical function, it was used to repeat technical instructions given through the audio channel. The text chat provided more scaffolded step-by-step instructions, which helped students follow the instructions. IMs were also useful for logistical purposes, for example, to communicate during group work when participants were in different locations or to ask for a teleport to join a participant who was in a different location.

7.5.1.2.1. Functions and activities.

Most turns in the discussion activity were task-oriented. The text channel, although seldom used, contained mostly form-focused turns, which had the aim of modeling words. On the other hand, the teacher turns during the guided tour displayed a wider range of functions. Most turns were task-focused, however, they were closely followed by logistic turns. The high presence of logistic turns could be due to the fact that the tour activity is dynamic, it takes place in different locations and it is logistically more complex than a static discussion. Thus, in activities that were student led and exploratory, the teacher performed a wider range of functions. During the guided tour, there was a much higher presence of text chat. The text chat was used as a feedback channel so as not to obstruct the flow of the presentations that took place through the voice channel.

7.5.2. Non-verbal mode: avatar gestures.

There were fewer uses of avatar gestures than expected. The deictic gesture of pointing was the most frequent avatar-based non-verbal behavior that the teacher used. The teacher used pointing for clarification purposes as well as to activate an object. Students mainly used pointing to activate objects, but they also used pointing to refer to an object. It is important to note that when a participant clicks on an avatar, the avatar automatically displays a pointing gesture. Thus, it is understandable that this was the main gesture used, as the other gestures required the user to purposefully activate a gesture. There were also several instances found of student animations. Animations were used mostly in a playful way, as a way of experimenting and having fun in the virtual world.

These findings mirror Gowan's (2011), who also reports little use of gestures. She ventures that students might have enough with the voice, text chat and visual modes offered by the *Second Life* environment. However, sections 7.1 and 7.2 in this chapter showed how a number of verbal strategies were used to compensate for the limited range of paralinguistic

and non-verbal behavior as well as to show presence. A second explanation for the paucity of avatar gestures is that non-verbal behavior is so unconscious and ingrained in our communication, that participants do not think of consciously activating gestures in a virtual world (Verhulsdonck & Morie, 2009). A third possibility is that participants were not *Second Life* savvy, and activating a gesture in *Second Life* entailed several steps: opening their inventory, finding the gestures folder and activating a gesture. They may have felt overloaded with the interface, the visual world and the different channels. Also, it might be seen as a less efficient way of getting someone's attention as it is more time-consuming and the addressee will only notice the gesture if their avatar is nearby and facing its interlocutor.

7.5.3. Interplay of the verbal mode: text chat and oral chat.

As we have observed in the Analysis chapter (section 6.5.1.2.) the teacher used the text chat for a variety of functions including technical, logistics, task, and form purposes.

Task-focused chat turns were used by students as a channel for participation in activities and by the teacher to acknowledge and give feedback on student contributions in an unobtrusive way so as not to interrupt the flow of the interaction. Furthermore, the text chat had a special role in form-focused turns as almost half of the teacher's form-focused turns happened through the text chat. This illustrates that the teacher used the text chat to model and reinforce new or key words, in a similar way to a blackboard in a face-to-face class, and used the text chat as a modality that complemented the audio channel, which was the main channel through which the class unfolded. Regarding the logistics function, the text chat was also used to repeat and summarize explanations and instructions that had already been formulated previously through the oral channel. These findings corroborate Hampel & Stickler's (2012) who report the text chat being used as a means for complementation of the audio channel.

Hampel & Stickler (2012) and Cunningham et al. (2010) find a second use of the text chat in relation to the audio chat: compensation. The present data also shows numerous instances of chat use as a compensation strategy. Participants opted for the text chat when there were technical sound problems and the teacher also used it as a means to backchannel what students were saying through the audio channel. In particular, private instant messages were used essentially as a technical support channel in the class. There were no task-focused instances found, most instances were logistical and technical. Thus, IMs were used a channel to provide private an unobtrusive non-task related help, without interrupting the flow of the interaction.

Finally, Hampel & Stickler (2012) report the verbal channels being used at times in competition. Although at a much lesser rate, there were also instances of competition found in the data. This happened when students were having technical problems in the middle of a class activity and used the text chat to call the teacher's attention and signal their problem. There was also evidence of competition when the students used the text chat as an 'aside' channel for humor and off-task talk. However, this did not occur frequently.

Thus, there was evidence of interplay between the text and the voice chat. The text chat was mainly used to complement or compensate the voice channel, but there were also instances of voice and text competition (Hampel & Stickler, 2012).

There was also evidence of verbal interplay through the use of channel switches. Channel switches were often used by both the teacher and the students during the classes for different purposes.

7.5.3.1. Student channel switches.

Students used channel switches as a compensation strategy when they had microphone problems or when someone was not responding through the oral channel, they used the text channel to call someone's attention.

There were some instances found where students used different channels depending on whether the addressee was the teacher or a classmate; they used audio channel to talk to the teacher and the text channel to communicate with a classmate. This shows that the students identified the oral channel as the official channel of communication.

Examples of channel convergence were also found in the data. In some cases, the students responded to the teacher's request using the same channel the request was made in.

7.5.3.2. Teacher channel switches.

Channel switches were an important strategy found in the data, as it accounted for 15.4% of the total teacher turns. Most channel switches happened during the fluency and procedural contexts. The predominant function for teacher channel switches was technical. Half of the technical channel switches consisted of self-repetitions of technical instructions or of channel checks. Channel switches were found to play an important role in providing technical help or clarification.

Channel switches for procedural purposes were used to form groups, to summarize key instructions when students were having audio problems, or to make comments without interrupting the flow of the task. Again, switching to the text channel was used for clarification purposes. Task-oriented channel switches were used to model new words. The text channel was used as a classroom board, as the teacher would use the text chat to type important words that came up during the class. Because the teacher used the text chat sparingly, channel switches to the text channel were made more salient and could be used to model or focus on lexical items, for organizational purposes or for technical clarification and help. This strategy was also used to show presence unobtrusively during a presentation.

Channel switches proved to be a useful communication strategy in this multi-channel environment to maximize communication and compensate for communication problems. Hampel & Hauck state that

"language learners will have to become competent in both switching linguistic codes *and* switching semotic modes and to do so consciously. On top of that they have to become 'fluent' in new codes such as online speech and writing *and* image." (2006, p. 12)

Hence, channel switches should be considered multimodal discourse management strategies and taught in MUVE orientation courses before starting the actual course, as it is a very useful classroom management strategy for teachers as well as a communication strategy for learners.

7.5.4. Verbal And Visual Mode.

Örnberg (2005) describes how the sense of presence, shared space, and immersiveness has an effect on the interaction that is produced within a MUVE. One of the indicators of presence is the use of deictics and spatial cues to make reference to a shared space (Örnberg, 2005; Wigham, 2012). The data shows that participants indeed made reference to the visual environment through verbal and visual strategies when communicating in the MUVE.

This section discusses how strategies such as location checks, in-world references and visual addressivity show an interdependence of the visual mode with the verbal mode.

7.5.4.1. Location check.

Location checks were few but were found across all the sessions. Location checks were context-dependent strategies and were found whenever there was a location change. That is why they were not found in discussion tasks, which took place in one location and were static activities. Most location checks were found during the guided tasks, as the tours were dynamic and involved location changes.

These strategies were found in every session because every session had at least two location changes. All the location checks occurred during the procedural context, due to the nature of the locations checks. As with channel checks for the sound, the teacher checked that

all the students were in the desired location, especially after a location change and before starting an activity. If a student was missing, the location check would be followed by a teleport offer to the group's location. Other times, the shared space was very big and it was difficult to find a participant, so location checks were used. One last case of location checks were those triggered by a slow internet connection or another technical problem which made the graphic environment load slowly.

During the guided tours, students also used location checks when moving to a new location, assuming the tour guide role. This strategy was probably transferred from the classroom management routines they had seen the teacher use in previous sessions. Thus, there was evidence of learners using group-management discourse, as Chun (1994) reports.

7.5.4.2. Ambiguity in a MUVE: in-world reference.

The visual mode played an important role in MUVE communication, due to the feeling of co-presence that participants sharing a same location in a MUVE experience. Because of this feeling of co-presence, participants often needed to make reference to the visual mode when communicating.

a) Verbal reference

Both the teacher and the students used verbal and visual strategies to make in-world references, however, the verbal mode was used more frequently than the visual mode. Participants made frequent use of verbal deictics such as 'here' or 'there' which illustrate the importance of the visual environment and how this contributes to the feeling of having a shared space.

The teacher used in-world references during location changes and instructions; these references had a logistical function. References with a technical purpose were used especially in technical instructions. Surprisingly, there were few deictics with a technical function, the

teacher mostly used the term of the in-world object. The paucity of deictics may be due to the fact that it is important to use specific language in technical instructions to avoid ambiguity.

The most frequent student in-world references had a task function and most of them occurred during the guided tours. This was expected due to the context-dependent nature of the guided tours.

b) Visual reference

Although less frequently than through the verbal mode, participants also used the visual mode to make reference to in-world objects. The visual strategies that were used were two, pointing and avatar proximity.

There were few instances of pointing. The teacher used this deictic gesture on eleven occasions for two reasons, to exemplify an instruction and to make reference to an object. On the other hand, the students only pointed on three occasions and always as a reaction to the request to point made by the teacher.

The second visual strategy was proximity. As the tasks were mainly focused on guided tours, it was important to position one's avatar close to the object that was being described. Proximity was the most popular visual reference strategy used by both the teacher and the students. The teacher used proximity to avoid ambiguities during the tour and to direct the students' attention to an object or a place. Students used this strategy especially during their final guiding task and when preparing for their guided tour.

7.5.4.3. Visual Addressivity.

Few studies have taken into account the visual nature of a MUVE and how it affects addressivity. Naper (2011) reports how she found visual addressivity in her data and points this as a possible cause for having a lower number of explicit addressivity occurrences. Peterson (2008) also explains the low rate of addressivity in his data could be due to the fact

that avatars having a conversation could move closer to each other rendering the use of verbal addressivity unnecessary.

There were two types of addressivity regarding the avatars' proxemic behavior: (1) verbal addressivity with a proxemic component (i.e. the speaker positions their avatar in front of their interlocutor's avatar) and (2) verbal addressivity with no proxemic component. In the Analysis chapter we observe that 90% of the instances of teacher addressivity included a proxemic component. This finding coincides with Naper's (2011), but contrasts with Wigham's (2012) who found that learners did not naturally orientate their avatar's towards their interlocutors. The few instances that appeared to disregard proxemic norms were mostly found at the beginning of the class or during a moving or transition stage. Therefore, proxemic norms from face-to-face contexts were transferred to the MUVE context. This finding supports other studies that report that participants in a MUVE transfer proxemic rules used in face-to-face conversations to the MUVE, for example, positioning their avatar towards their intelocutor's (Friedman, Steed and Slater, 2007; Naper, 2011). This fact also illustrates how participants showed a sense of co-presence when they were in a MUVE (Naper, 2011).

It must be taken into account that it can take more time to adjust to proxemic norms than in a face-to-face context, especially when participants log into the environment or there is a location change in *Second Life*. A possible explanation for this time lapse could be that participants were focusing on the more technical aspect of moving from one place to another as well as the fact that graphics could take some time to load completely when there was a location change.

Chapter 8: Conclusion

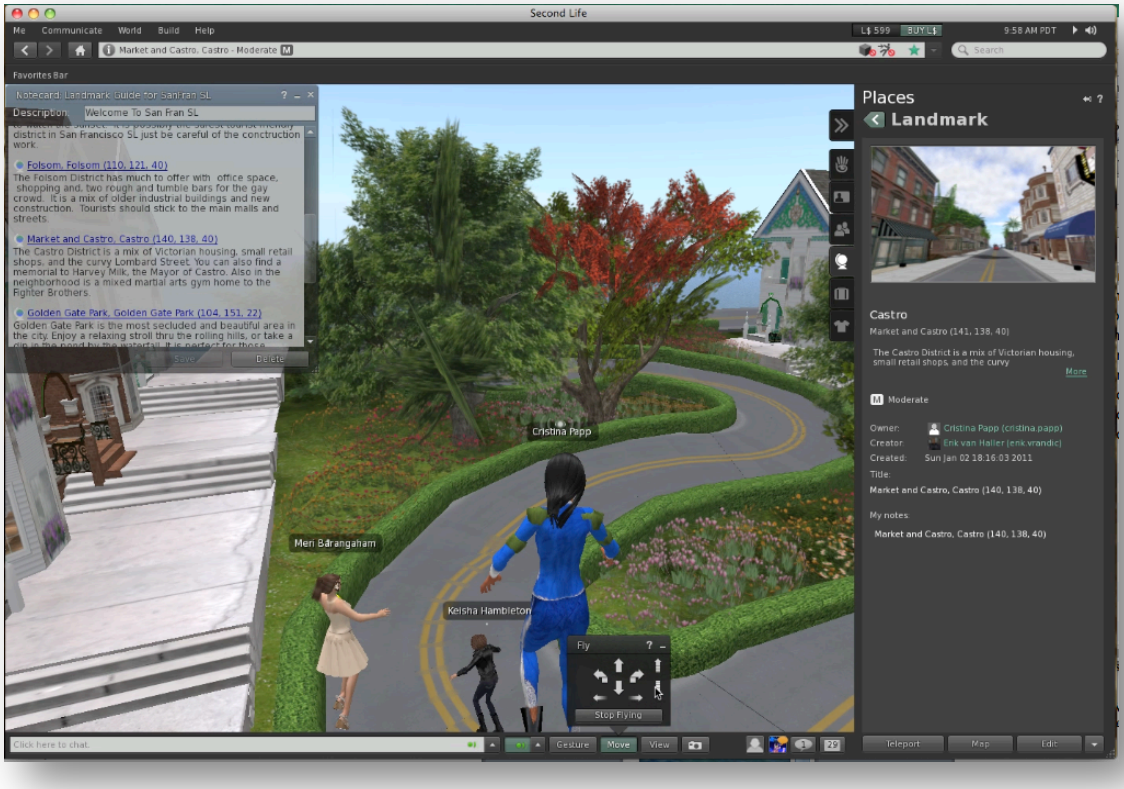


Figure 29. Avatars flying and exploring Lombard street from above

The purpose of this study was to investigate what kind of discourse management strategies, interactional modifications and corrective feedback devices the teacher used with undergraduate learners of ESP in the Multi-User Virtual Environment of *Second Life*. The second goal was to describe and analyze the nature of multimodal communication in a MUVE class and observe how the different modes available in the environment were used to communicate and minimize communication breakdowns. These goals generated four research questions outlined in chapter four which will be answered in the following section.

This study suggests that participants in *Second Life* can achieve successful communication by using the different modalities offered through the verbal and the non-verbal modes of *Second Life*. Specifically, it has focused on how the teacher used several modalities in combination to create meaning. Several authors have studied learner

communication in MUVEs (Peterson, 2005, 2008, 2010; Gowans, 2011), however, there are few studies that focus on the role and discourse of a teacher in a MUVE. We have seen how the text channel has been used often as a complement to the voice channel in interactional modifications, to make teacher discourse more understandable, and during feedback provision, as a strategy to provide unobtrusive feedback or to model a form. The text channel has also been used as a compensatory strategy when students were experiencing sound problems or to emulate a classroom board. The visual mode of *Second Life* was important in the proxemics organization of the participants, as addressivity with a proxemics component was more predominant than addressivity without this proxemics component. Participants also made frequent reference to in-world objects in *Second Life* through the verbal and the non-verbal modes. Thus, the graphic environment contributed to create a sense of co-presence and immersion where face-to-face proxemics norms were transferred to this MUVE.

8.1. Summary of findings

This section aims to summarize the findings of this research by answering the research questions. Next, the methodological and pedagogical implications of this study will be discussed. Finally, this section ends with an outline of the limitations and lays out future research directions.

RQ 1. What kind of online discourse management strategies (transactional and interactional) does the teacher use in ESP lessons in a MUVE?

The data analysis conducted in chapter six shows that the teacher in this study used a range of transactional strategies in order to manage interaction effectively in *Second Life* as well as interactional strategies that contributed to creating a feeling of co-presence and online community.

Despite the visual nature of the environment and the feeling of immersion that participants experience, feedback markers were the most frequently used transactional strategy. This strategy was still necessary to show presence and understanding, as in non-graphic-based SCMC environments, as well as to encourage the students to take the floor. The great presence of this strategy is explained by the fact that the MUVE used in this study had a limited range of non-verbal cues to show attention, and the participants rarely used the avatar's gestures. Addressivity was also very present in this study. Several authors have made reference to the position of addressivity within a turn (Peterson, 2008; Naper, 2011), however, there was no relevant difference observed regarding the position of addressivity in a turn. Addressivity was mainly used for logistical and technical purposes, rather than task purposes; for example, many of the channel checks used to set up the technical conditions for the class contained addressivity. The high presence of addressivity indicated a need to make the intended addressee explicit to avoid ambiguities and was not used as a strategy to make up for the disrupted turn adjacency of fast-paced text messages which is reported in text-based SCMC (Werry, 1996; Herring, 2001) as addressivity mainly occurred through the voice channel. Addressivity was used a compensation strategy to clarify who the intended recipient of the message was. This strategy had the aim of compensating for the lack of non-verbal cues such as gaze present in face-to-face contexts and, thus, minimize the danger of communication breakdowns. The fact that feedback markers and addressivity were the most prominent strategies points to the notion that the MUVE graphic and voice-enabled interface still lacks essential non-verbal cues, which face-to-face contexts possess, to show presence and indicate who the interlocutor of the message is, making compensatory strategies necessary in MUVE environments.

There was a difference in strategy use between the two types of activities that were analyzed. The only two relevant strategies that the teacher used during the discussion activity

were feedback markers and addressivity. On the other hand, during the guided tour the teacher engaged in a wider range of transactional strategies and, although the main strategies were feedback markers and addressivity, there was evidence of other strategies such as technical help and channel checks. The difference in strategies used was due to the type of task. The first activity was static and teacher led, whereas the second activity was student led and involved exploration of different locations. Hence, the second activity was technically and linguistically more complex and led the teacher to engage in a wider variety of strategies to help students to follow the class and to achieve successful communication in this environment. Another relevant difference was that the feedback markers in the guided tour were much more numerous and varied than in the discussion activity. This fact is explained by the inversion of the participants' roles as, during the tour, the students were the guides and, therefore, in charge of the content, while the teacher stepped back using feedback markers to display presence and understanding.

The teacher made a wide use of interactional strategies in an attempt to establish a comfortable learning environment conducive to participation as well as an online community. The main interactional strategies that the teacher used were praise, greetings and leave takings, character names, and inclusive forms. Praise was used to provide positive feedback on the students' utterances with the aim of creating a supportive environment that would encourage students to participate. Social routines such as greetings and leave takings were also important in the classes and helped form a feeling of community. This politeness strategy was closely linked to channel checks as the teacher used the greeting stage of the class to greet students individually and, at the same time, check their sound, which is in line with Wang's (2014) findings. The teacher engaged in the playful nature of the MUVE by using the students' character names at times to address them, however, she preferred using their real life names. The teacher used inclusive forms frequently to signal in-group status

with her students as well as signaling when the teacher was adopting a different role to the one of teacher.

As with the transactional strategies, both activities showed different interactional strategy use. The main strategies used during the discussion activity were praise and off-task talk, the rest of the strategies had a very low or no presence. During the guided tour, however, the teacher engaged in a wider range of strategies. The most prominent strategy was the use of inclusive forms, followed by praise, off-task talk and agreement. Praise was an important strategy in both tasks and was used to create a positive environment and to encourage students to participate. The other strategy that was common to both tasks was off-task talk. Off-task talk always referred to situations and events related to the MUVE that were not directly related to the task. This strategy was more relevant during the guided tour as the location changes prompted comments about the environment. Thus, the MUVE played a role in creating a feeling of co-presence, surprise and playfulness among the participants. The main interactional strategy during the guided tour was the use of inclusive forms, which, as mentioned in the previous paragraph, was used to signal in-group status as well as to signal a change from the expected teacher role, thus adopting a peer role as opposed to a teacher role.

RQ 1.1. Which ones are adaptive or specific to a MUVE?

There were a number of MUVE-specific or adaptive strategies identified in the data. These strategies were related to the limited range of paralinguistic or nonverbal cues to indicate presence or following of a message, to the use of the visual or audible mode, to the playful nature of the MUVE, or to the *Second Life* medium.

Reception checks and reception acknowledgements were specific MUVE strategies related to the possibility of 'gifting' or transferring objects and notecards from one avatar to the other. However, there were very few reception checks found in the data. This strategy is

closely linked to the types of activities students need to do in a MUVE and whether they involve the teacher transferring material in-world or not. In the present study, the teacher did not need to transfer notecards very often. Furthermore, the *Second Life* system notifies the sender if the other user has received the gift. Thus, this strategy did not have a relevant presence in the data. Reception checks were triggered by students' clarification requests or appeals for help, so as to ensure that the student had received the material correctly, and they were also carried out at the end of the gifting process when there was a high number of students, to make sure that the teacher had not missed any student. On the other hand, reception confirmations had a slightly higher presence than reception checks. As with reception checks, reception confirmations will depend on the kind of task students have to perform and if they submit their work by transferring any notecard or object to the teacher. In the present data, there were few activities that required this kind of submission. Nevertheless, every time that the teacher received a gift from the student, the teacher would acknowledge the reception usually by praising or thanking the student. The presence of these medium-management strategies is related to the absence of non-verbal feedback cues that indicate that the teacher or the students have received the material correctly.

Addressivity is a discourse management strategy that has been identified in text-based SCMC (Werry, 1996; Herring, 2001) and in MUVEs (Peterson 2005, 2008, 2010). As outlined before, verbal addressivity was one of the main transactional strategies found. However, apart from verbal addressivity, participants engaged in another type of addressivity related to the visual mode: visual addressivity (Naper, 2011). Most instances of verbal addressivity also had a proxemic component. This indicates that face-to-face proxemics norms present in face-to-face contexts were transferred into the MUVE environment, thus evidencing a feeling of co-presence.

Another MUVE-specific strategy related to addressivity was the use of character names. Although participants had the opportunity of changing their names, only three of them chose to adopt a new name in *Second Life*. The teacher used the students' character names, but she used their real life names more often. The fact that few students chose a character name and that the teacher used their real life name more frequently showed a reluctance to engage in the playful nature of the MUVE. This reluctance could be due to the fact that the participants already had a teacher-student relationship in real life and already knew their real life names. Hence, the frequency of this MUVE-specific strategy will depend on the acquaintance status between the teacher and the students and between the students.

Off-task talk has also been identified in text-based CMC as a strategy for building intersubjectivity and creating an online community. In this study there was no off-task talk related external issues. This is due to the fact that the recordings only show the teacher's perspective; it might be possible that the students engaged in off-task talk during group work when the teacher was not present or through private messaging. However, students did engage in MUVE talk that was not directly related to the task. The playful nature of the environment as well as unexpected situations that arose in it, prompted non-task related comments or small talk. This strategy contributed to develop a sense of online community as well as a sense of co-presence and awareness of the environment.

There were other strategies found related to the voice feature that were not only specific to *Second Life*, but to any online environment that is voice-enabled. There was frequent use of technical help found in the data as well as channel checks. Channel checks, which were mainly found during the greeting stages of the lesson, were essential to smooth out the technical problems before the class and minimize possible communication breakdowns due to sound issues. Addressivity was present in most of the channel checks to ensure that the message was received by the intended recipient as well as to know who was having technical

problems. During student-led activities, many students adopted the strategy used by the teacher and also used it before starting the presentation.

RQ 1.2. What role do technical strategies have in a MUVE class?

As this environment was new to all the participants, technical help was an important component in the teacher's discourse, as it accounted for 11.2% of her turns. There were three kinds of technical help provided: technical instructions for the whole class to perform an activity, technical help prompted by students' appeals for help, and technical help as a reaction to students' sound problems. Most instances of technical help were found in the third group; furthermore, whilst the first two types of help decreased as the course developed, sound problems were present throughout the whole course. This fact signals that sound problems may be independent to participant familiarity with the MUVE, and participants using any online environment that is voice-enabled are prone to encounter unexpected sound problems at some point during a course. Nevertheless, there was an overall tendency for technical problems to decrease throughout the sessions, as the students grew more familiarized with the environment. Technical help as well as as technical talk about the environment were important to minimize and deal with technical disruptions (Condon & Cech, 2010; Cunningham et al, 2010). Also, this finding illustrates that teachers need to be prepared to deal with technical problems and it should be integrated in their course design.

RQ 1.3. What actions does the teacher perform on the interface to manage a class in a MUVE?

The teacher performed a number of actions on the *Second Life* program to manage the class. These actions were grouped intro three categories: interface and inventory management, interaction with the graphic in-world environment of *Second Life,* and actions

to interact with the participants. The most frequent actions were interface management actions (53%) followed by interaction with participants (32%). The teacher used her inventory to create and manage notecards, perform inventory searchers, zoom in and out and teleport to different locations. Regarding interaction with the students, the teacher often needed to adjust their volumes, send them teleport invitations, give them class material, or send them private messages. Theses findings highlight three classroom management aspects that teachers need to master in order to manage a class in *Second Life*.

RQ 2. What kind of interactional modifications does the teacher engage in to make her input more comprehensible in ESP lessons in a MUVE?

The teacher used several strategies to ensure understanding, make her output more understandable, and maintain the flow of communication.

The first type of interactional modifications concerned negotiation strategies: clarification requests, confirmation checks and comprehension checks. Comprehension checks were the main negotiation strategy found in the data and the second most frequent teacher modification strategy. However, comprehension checks that were placed in the middle of an utterance were used as fillers and did not check for actual understanding, so they did not trigger student confirmation. Many comprehension checks had a logistical function rather than a task function and were found in instructions. The second most frequent negotiation strategy found was confirmation checks. There was a high number of confirmation checks used to check the meaning of a student's utterance. There were few clarification requests, however. Most clarification and confirmation checks triggered student output clarification. Comprehension checks, on the other hand, just triggered short confirmations of understanding. Thus, the negotiation strategies served different functions: comprehension checks were used to trigger student backchannels to check if the students

were following and the other two negotiation strategies were more successful at pushing student output.

The second type of interactional modifications dealt with self-repetitions and self-reformulations. The most popular teacher modification strategy was self-repetition. Most self-repetitions occurred in the fluency context and were used to model lexical items. Self-repetitions were also used in the procedural context to form groups or repeat instructions. Self-reformulations, on the other hand, had a much lower incidence than self-repetitions. They were also used mainly in the fluency context to simplify the teacher's output. The main triggers for self-reformulations were student silence and student repetition or clarification requests.

RQ 2.1. Does the teacher use the written channel as an aid to provide comprehensible input?

Negotiation strategies were mostly carried out through the voice channel. Self-repetitions and self-reformulations, however, did make use of the both the text and the oral channel to provide comprehensible input. Furthermore, there was evidence of bimodal self-repetitions, 73% of the self-repetitions involved a channel switch from the oral to the written channel. There were also instances of channel switches used in self-reformulations. In bimodal self-repetitions and self-reformulations, the text channel was used as a complementary channel to the voice channel and was mainly used for modeling purposes. The text channel was also used for compensatory purposes, emulating a fact-to-face board or used to summarize instructions for students who were having sound problems.

Thus, the text channel had a presence in self-repetitions and self-reformulations. Furthermore, the multi-channel nature of the MUVE was exploited to make teacher input

more comprehensible as there was evidence of oral and written interplay in the strategies for complementary and compensatory purposes.

RQ 3. What kind of corrective feedback does the teacher provide in ESP lessons in a MUVE?

In this study, there were no instances of explicit corrective feedback found, however, the teacher engaged in several types of implicit corrective feedback such as clarification requests, confirmation checks, total recasts and partial recasts. However, negotiation strategies were seldom used, 72.7% of the corrective feedback strategies found were recasts, including both total and partial recasts. This finding confirms Wigham's (2012) who also reports recasts as being the preferred type of corrective feedback provision in her study in *Second Life.* A possible reason for the abundant presence of recasts could be because the teacher did not want to interrupt the interaction during the task.

RQ 3.1. What kind of errors does the teacher offer corrective feedback on?

The teacher mainly focused her corrective feedback on grammatical and lexical non-target-like utterances, followed closely by L1 utterances. This finding mirrors text-based SCMC studies (Tudini, 2003; Pelletieri, 2000; Blake, 2000; Smith, 2003) which report corrective feedback being focused mainly on lexical and grammatical non-target-like forms. Most total recasts dealt with grammatical and L1 non-target-like forms while partial recasts focused on lexical non-target like forms.

RQ 3.2. How do students react to the feedback?

36% of the instances of corrective feedback received a student response, specifically 17.8% were acknowledged and the other 17.8% resulted in modified output. Negotiation strategies, although fewer in the data, had a higher student response rate than other corrective

feedback strategies. However, most instances of acknowledgement and uptake were triggered by recasts. The student response rate is lower than other studies such as Wigham (2012) who reports a 58% response rate. This low student response rate could be due to learners experiencing a cognitive overload because of the complexity and novelty of the MUVE, the multiplicity of channels, and their low language proficiency. These factors might have led to corrective feedback going unnoticed. These results point to the need to for the use of more explicit forms of corrective feedback that will lead the student to direct their attention to the corrective feedback. However, there needs to be a balance between explicit and implicit feedback so as not to obstruct communication or discourage students from participating.

RQ 3.3. Which is the preferred channel for corrective feedback?

The preferred mode for corrective feedback provision was the oral mode, as it accounted for 60.7% of the instances, while the text channel only accounted for 9% of the total. The other 30.3% of the corrective feedback instances were bimodal, combining both the oral and the written mode.

Negotiation strategies were basically oral, however, in recasts both the oral and the written channel were used, often in a complementary fashion. 27% of the total recasts were bimodal, however, the rate goes up to 42.3% for partial recasts. In bimodal recasts, the teacher tended to provide corrective feedback through the oral channel and then repeated her feedback through the written channel. The text channel was used as a complement to the oral channel to model the target-like form.

The text channel was only present in bimodal total recasts, there were no total recasts using only the text chat. On the other hand, 27% of the partial recasts were carried out solely through the text channel. Thus, in partial recasts the text channel was also used as a standalone channel to provide fast unobtrusive corrective feedback.

Regarding student response, students responded with similar rates to bimodal and monomodal partial recasts. However, with total recasts, bimodal recasts had a higher rate of student response, accounting for 45.4% of the total recasts that were bimodal, while the response rate for monomodal recasts was 16.1%. Thus, the repetition of the repair and the use of the text chat could make corrective feedback more salient to the student and thus enhance the likelihood of student response.

RQ 4. What modes do participants use to communicate in ESP lessons in a MUVE?

The participants' actions were classified into two modes: the verbal mode and the non-verbal mode. Within the verbal mode participants communicated through oral and written channels and within the non-verbal mode, the participants used gestures and performed kinesic and proxemic actions on the MUVE environment.

RQ 4.1. What are the different channels in the verbal mode used for?

The majority of the teacher's turns had a logistical function, followed by the task, and the technical functions. Overall, 60% of the teacher's turns were devoted to procedural issues as opposed to task-focused turns.

There was no channel in particular identified with a specific function, as the oral channel was the predominant channel in all functions and the text chat was also present in all functions. However, almost half of the form-functioned turns were carried out through the text channel. The teacher used the text chat as a complement to the voice channel to focus on important words that appeared during a lesson, to acknowledge a student's contribution or to model a word. The IM channel was only used for technical or logistical functions, usually triggered by students' technical problems or appeals for help.

RQ 4.2. Is there a preferred channel communication?

The teacher showed a clear preference towards the audible mode, as 80% of the teacher's turns were carried out through the voice channel. Hence, the teacher considered the audio channel as the default channel of communication for the lesson. The students, on the other hand, displayed a balanced use of both channels, with a slight preference towards the written channel, as it accounted for 50.7% of their turns. The preference for the written channel could be due to two factors: often students experienced technical problems that impeded them to use the voice channel, secondly, many students showed reluctance to use the voice channel, probably due to shyness and to their low target language proficiency.

If we compare the teacher output and the student output, the teacher clearly dominates the voice channel, while the students dominate the text channel. This fact shows that students used the text chat to compensate for their low participation in the audio channel (Hampel & Stickler, 2012). However, this study shows a low participation rate and a teacher dominance of the overall floorspace. Hampel & Stickler (2012) and Stickler et al (2005) also report tutor dominance across the sessions as well as a reliance of the students for the tutor to take the dominant role.

RQ 4.3. Are there instances of combined use of modes to create meaning in a MUVE?

There were two types of modal interplay found: text and oral verbal interplay and interplay of the verbal mode with the visual mode.

Regarding verbal interplay, there were numerous channel switches found in the data. The text channel had a complementary role in most channel switches as it was used for logistical purposes, to clarify or repeat what had been said through the oral channel, to form groups, or to repeat an utterance when a student was having sound problems. Channel switches also had a task-function and were used to provide unobtrusive feedback when

another participant was holding the voice floor or to model an item. As the teacher did not make frequent use of the text chat, the text channel was more salient to the participants. Channel switches and the interplay of the oral and written channels proved a relevant strategy to maximize the communication potential in a MUVE.

There were three strategies identified concerning the verbal and the visual mode: location checks, in-world references and visual addressivity. Location checks were a common classroom management strategy found in every lesson. The teacher engaged in location checks every time participants teleported to a new location. This strategy was also adopted by the students when they were in the role of tour guides. Location checks were a classroom management strategy that contributed to creating a feeling of co-presence and awareness of the immersive environment they were in.

Participants often made reference to in-world objects during their activities through the verbal and the visual mode. The most frequently used mode by both the teacher and the students was the verbal mode. Through the verbal mode, participants made reference to objects by referring to the term or by using a deictic. However, there were also instances of non-verbal behavior to refer to an object. This reference was carried out by either pointing or placing one's avatar near the object. In-world references were used to reduce ambiguities and showcase the importance of the visual and spatial mode to communicate in a MUVE.

Finally, as seen in RQ1, most instances of addressivity had a proxemics component to them, showing that proxemic norms used in face-to-face interactions transferred to the MUVE, evidencing a sense of immersion in the world.

8.2. Implications for research methodology

As seen in section 5.6.3. in chapter 5, many annotation systems available fail to take into account the visual and spatial modes of a MUVE when transcribing communication, and at most, make additional comments of some non-verbal behaviors in brackets within the

verbal transcription. This study has used a new method for analyzing multimodal communication in online environments integrating both the verbal and the non-verbal mode.

Furthermore, the 3M method provides a two-level approach towards studying the data. The first step, the macro level, helps the researcher gain an overview of the development of the class and helps identify relevant scenes that stand out concerning the researcher's purposes. Once the scenes have been identified, the researcher can start the micro level of analysis. The annotation system is divided into four windows: video, verbal transcription, non-verbal transcription and interface transcription. These different dimensions can help the researcher focus on the different modalities present in meaning making separately. Next, through coding the different verbal turns and non-verbal actions and creating discourse sequences, the researcher can study how the different modalities interrelate with each other.

The 3M method can be useful for those interested in studying how the different modes are used in communication both in online and in face-to-face contexts.

8.3. Pedagogical implications

Although learners had a *Second Life* familiarization session before starting the course, the data shows that students struggled with technical problems, especially throughout the first half of the course. This fact shows that *Second Life* has a steep learning curve and that it is important to provide learners with sufficient familiarization support sessions before starting a course in *Second Life*. The participants in this study had one hour, which proved to be insufficient. Atkins and Caukill (2009) found that participants needed around ten hours to get used to the online environment. Devoting enough time to familiarization is important to minimize the number of technical problems that can arise throughout the course. However, it also raises the question of whether including such a complex environment and devoting ten hours to familiarization is feasible.

Besides environment familiarization, teachers additionally need a training course in *Second Life* before starting to teach. This course should include the three dimensions highlighted in the interface analysis; in particular, inventory management is important as most of the teacher's interface actions fell into this category. Technical turns took up an excessive part of the lessons in the present data, thus, teachers also need to obtain training on how to deal with technical problems as well as have a plan for those students whose voice is not working or who have recurrent technical problems and set some minimum requirements for taking part in the class. Teachers can set up a 'base camp' before a class starts to help students fix their problems so as not to take up class time. Pair teaching is also a useful method, as there can be a lead teacher in charge of moving the lesson forward and a peer teacher who can help students who have a problem, without interrupting the class (Sweeney et al, 2010; González et al, 2011). Furthermore, the number of students in a group should also be considered. The first session had thirteen students, this number of participants in one location caused technical sound problems and lag and the class proved difficult to manage. As a result, the class had to be split into two groups of six.

The time needed to set up a task should not be underestimated in *Second Life*, as it takes more time than in real life environments, and it should be taken into account during task design. The results show a high number of medium-management strategies, these strategies are going to be present any online environment (Condon & Cech, 2010), especially in multi-channel environments (Cunningham, et al., 2010), thus, learners and teachers need to be aware of these strategies to help them manage technical problems that are likely to arise at some point.

This study illustrates how participants have used the different channels and modes available for meaning-making. Students should be made aware of the different resources and strategies they have available and how to use them to communicate more effectively in

multimodal environments. This study shows how the teacher used the text chat as a strategy to complement the voice channel for several purposes such as modeling, feedback provision, aside comments, clarifying purposes, and to compensate for technical problems. Wigham (2012) reports the text chat playing different roles according to the role the teacher gave the text channel. Hence, the tutors needs to establish with the students how they are going to use each channel or how each channel should be used by all the participants, deciding what role the text chat is going to have.

This study also shows that students displayed a preference towards using the text channel. Thus, activities in multi-channel environments should be designed to accommodate learner preferences and to allow learners to select their preferred channel of participation rather than pushing the students to use the voice channel as this could have a negative effect on participation.

Finally, two different activities were compared, a discussion task and a guided tour task. The activities had a different impact on the strategies that were used. Overall, the guided tour generated a wider range of strategies as well as a higher rate of modal interplay than the discussion activity. This finding has implications for task design, as exploratory activities that make use of the MUVE's spatial and visual modes generate a wider variety of strategies, interaction, more modal interplay as well as more interactional strategies that promote community building as well as a feeling of co-presence.

8.4. Limitations of the research

This thesis being a case study has a limited generalizability of its findings. The sample size was relatively small and the activities designed in this study were tailored to suit a particular set of learners in a particular context. Nevertheless, the adoption of an ethnographic approach would have not allowed taking on more participants.

Institutional constraints also impeded devoting more time to the students' familiarization process to *Second Life* and posed access obstacles, as students were not allowed to use *Second Life* in the university's computer lab due to the amount of Internet bandwidth this program needed.

Another limitation concerns the scope of the data collection. The classes in *Second Life* were recorded through the teacher's computer, and thus had the teacher's perspective, but recordings from the student's computer were not obtained. This means that the recordings lack any private messages that students sent to participants other than the teacher or any other actions that the students were performing on their computer. On the other hand, the recordings show all the actions that the teacher performed on the *Second Life* interface, which can provide information on classroom management issues.

There were also limitations regarding the counting of the floorspace. In this study the participants' turns and words were used to calculate the floorspace. However, the silences were not taken into account due to the complexities of having several channels of communication occurring at the same time.

8.5. Future research directions

The data for this study was collected in 2010. MUVEs, and in particular *Second Life*, were very popular environments for distance education practitioners as well as researchers. MUVEs showed great promise as an embodied environment in distance education. They also provided interesting affordances in the design of immersive and creative learning experiences and spaces. However, this era has experienced ups and downs regarding the use ICT. Although there was a boom regarding MUVEs some years ago, *Second Life* nowadays has lost its popularity and researchers have shifted their interest towards other virtual worlds that have a game-oriented design rather than a social one. However, although *Second Life* might disappear, virtual worlds have existed since the 70s and will continue to exist and evolve.

This study provides insights regarding the potential of multimodal communication to create meaning through the combination of several modalities. More studies are needed to analyze what strategies users need to manage the multiplicity of communication modes to reach their communication goals and what effect it has on learning and teaching. There are many studies on learner communication in MUVEs, but it is necessary to research teacher discourse and teaching strategies too. Thus, another interesting dimension is the study of teacher discourse strategies to manage effective communication and to promote participation in multimodal environments. Another possible line of research is studying learner reactions to monomodal and bimodal corrective feedback and observing if bimodal feedback enhances noticing and response rates.

Several authors point to the low participation rate of students in multimodal environments (Hampel & Stickler, 2012; Stickler et al, 2005, Wang, 2014). More studies are needed on participation in online environments and the effects that task design has on participation. Another factor to study concerning participation is silence in a MUVE. Recording the students' screens during a class could help gain insights on aspects such as teacher waiting time and student participation, as well as factors that might affect participation such as technical overload.

Also, this study has showed how channel switches are common multimodal discursive devices in MUVE communication, studying the dynamics of turn-taking in multi-channel environments can be a promising line of investigation.

Finally, there is a growing body of literature (Hampel & Stickler, 2012) including this thesis, on the use of verbal channels in multimodal environments. However, it is also necessary to study how other non-verbal modalities have an effect on communication, this study has explored some strategies that have made use of the visual modality. Wigham (2012) provides an interesting framework to start studies in that direction.

MUVEs provide participants with the opportunity to fly away from the constraints of the four walls in the face-to-face classroom, bringing together participants from distant locations, and entering a land where anything and anyone is possible.

"Why it's simply impassible!

Alice: Why, don't you mean impossible?

Door: No, I do mean impassible. *(chuckles)* Nothing's impossible!"

— Lewis Carroll, *Alice's Adventures in Wonderland & Through the Looking-Glass*

References

Aldrich, C. (2009). *Learning Online with Games, Simulations, and Virtual Worlds: Strategies for Online Instruction*. San Francisco: Jossey-Bass.

Allwright, D. & Bailey, K. M. (1991). *Focus on the Language Classroom*. Cambridge: Cambridge University Press.

Anderson, T. L. (2009). Online Instructor Immediacy and Instructor-Student Relationships in Second Life. In C. Wankel & J. Kingsley (Eds.), *Higher Educations in Virtual Worlds* (pp. 101–114). Warrington: Emerald Group Publishing.

Baldry, A. (2004). Phase and transition, type and instance: patterns in media texts as seen through a multimodal concordancer. In *Multimodal Discourse Analysis: Systemic functional perspectives.* (pp. 83–108). London & New York: Continuum.

Bani, B., Genovesi, F., Ciregia, E., Piscioneri, F., Rapisarda, B., Salvatori, E., & Simi, M. (2009). Learning by creating historical buildings. In J. Molka-Danielsen & M. Deutschmann (Eds.), *Learning and Teaching in the Virtual World of Second Life* (pp. 125–144). Trondheim: Tapir Academic Press.

Bax, S. (2003). CALL—past, present and future. *System,* 31(1), 113-28. doi: 10.1016/S0346-251X(02)00071-4

Baym, N. K. (1995). The Performance of Humor in Computer-Mediated Communication. *Journal of Computer-Mediated Communication*, *1*(2), 0. doi: 10.1111/j.1083-6101.1995.tb00327.x

Beauvois, M. H. (1998). Conversations in Slow Motion: Computer-Mediated Communication in the Foreign Language Classroom. *Canadian Modern Language Review*, *54*(2), 198–217. doi: 10.3138/cmlr.54.2.198

Beauvois, M., & Eledge, J. (1994). Personality Types and Megabytes : Student Attitudes Toward Computer Mediated Communication (CMC) in the Language Classroom. *Calico Journal*, *13*(2&3), 27–45. doi: 10.1558/cj.v12i2-3.27-45

Bezemer, J., & Jewitt, C. (2010). Multimodal Analysis : Key issues. In L. Litosseliti (Ed.), *Research Methods in Linguistics* (pp. 180–197). London: Continuum.

Blake, R. J. (2000). Computer mediated communication: A window on Spanish L2 interlanguage. *Language Learning & Technology*, 4 (1), 120–136. Retrieved from http://llt.msu.edu/vol4num1/blake/

Blake, R. J. (2005). Bimodal CMC: The Glue of Language Learning at a Distance. *CALICO Journal*, *22* (3), 497-511. doi: 10.1558/cj.v22i3.497-511

Book, B. (2004). Moving Beyond the Game: Social Virtual Worlds. In *State of Play,* 2, 6-8. Retrieved from http://www.virtualworldsreview.com

Bower, J., & Kawaguchi, S. (2011). Negotiation of Meaning and Corrective Feedback in Japanese/English eTandem. *Language Learning & Technology*, *15*(1), 41–71. Retrieved from http://llt.msu.edu/issues/february2011/bowerkawaguchi.pdf

Bowers, R. (1987). Developing perceptions of the classroom: observation and evaluation, training and counseling. In R. Bowers (Ed.), *Language Teaching Education: An integrated programme for EFL teacher training* (pp. 3–11). London: Modern English Publications in association with the British Council.

Brown, G., & Yule, G. (1983). *Discourse Analysis*. Cambridge: Cambridge University Press.

Brown, P., & Levinson, S. (1987). *Politeness: Some Universals in Language Usage*. Cambridge: Cambridge University Press.

Calsamiglia, H., & Tusón, A. (1999). *Las cosas del decir. Manual de análisis del discurso*. Barcelona: Ariel.

Cambra, M. (2003). *Une approche ethnographique de la classe de langue.* Paris: Didier.

Cameron, D. (2001). *Working with spoken discourse*. London: SAGE.

Campbell, A. (2003). Foreign language exchange in a virtual world: An intercultural task-based learning event. Retrieved August 23, 2015, from http://e-poche.net/files/flevw.html

Canale, M. (1983). From communicative competence to communicative language pedagogy. In C. Richards & R. W. Schmidt (Eds.). *Language and communication* (pp. 2–27). New York: Longman.

Cassell, J. (2001). Conversational Agents Representation and Intelligence in User Interfaces. *AI Magazine*, *22*(4), 67–84. doi: 10.1609/aimag.v22i4.1593

Cazden, C. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth, NH: Heinemann.

Chapelle, C. (1997). CALL in the year 2000: Still in search of research paradigms? *Language Learning & Technology*, *1*(1), 19–43. Retrieved from http://llt.msu.edu/vol1num1/chapelle/

Chapelle, C. (1998). MULTIMEDIA CALL: LESSONS TO BE LEARNED FROM RESEARCH ON INSTRUCTED SLA. *Language Learning & Technology*, *2*(1), 22–34. Retrieved from http://llt.msu.edu/vol2num1/article1/

Chapelle, C. (2001). *Computer Applications in Second Language Acquisition*. Cambridge: Cambridge University Press.

Chapelle, C. (2003). *English Language Learning and Technology*. Amsterdam: John Benjamins.

Chapelle, C. A. (1999). Research questions for a CALL research agenda: A reply to Rafael Salaberry. *Language Learning and Technology*, *3*(1), 108–113. Retrieved from http://llt.msu.edu/vol3num1/comment/reply.html

Chaudron, C. (1988). *Second Language Classrooms. Research on teaching and learning*. Cambridge: Cambridge University Press.

Cherny, L. (1995a). The modal complexity of speech events in a social MUD. *Electronic Journal of Communication*, *5*(4), 1–29. Retrieved from http://www.cios.org/EJCPUBLIC/005/4/00546.html

Cherny, L. (1995b). The Situated Behaviour of MUD Back Channels. *Proceedings of the AAAI Spring Symposium*.

Chou, C. C. (2001). Formative Evaluation of Synchronous CMC Systems for a Learner-Centered Online Course. *Journal of Interactive Learning Research*, *12*(2), 173–192. Retrieved from http://www.aace.org/pubs/jilr/

Chun, D. (1994). Using computer networking to facilitate the acquisition of interactive competence. *System*, *22*(1), 17–31. doi:10.1016/0346-251X(94)90037-X

Chun, D. M., & Plass, J. L. (2000). Networked multimedia environments for second language acquisition. In M. Warshauer & R. Kern (Eds.), *Network-based language teaching: concepts and practice* (pp. 151–170). Cambridge: Cambridge University Press.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.

Collentine, K. (2009). Learner use of holistic language units in multimodal, task-based synchronous computer-mediated communication. *Language Learning & Technology*, *13*(2), 68–87. Retrieved from http://llt.msu.edu/vol13num2/collentine.pdf

Condon, S. L., & Čech, C. G. (2010). Discourse Management in Three Modalities. *Language@Internet*, *7*. Retrieved from http://www.languageatinternet.org/articles/2010/2770

Corder, S. P. (1977). "Simple codes" and the source of the learner's initial heuristic hypothesis. *Studies in Second Language Acquisition*, *1*(1), 1–10. doi: http://dx.doi.org/10.1017/S027226310000067X

Coupland, N., & Jaworski, A. (Eds.). (1997). *Sociolinguistics: A Reader and Coursebook*. Houndmills: Macmillan Press.

Cunningham, U; Beers Fägersten, K.; Holmsten, E. (2010). "Can you hear me, Hanoi?" Compensatory Mechanisms in Synchronous Net-Based English Language Learning. *The International Review of Research in Open and Distance Learning*, *11*(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/774/1488

Darhower, M. (2002). Interactional features of synchronous computer-mediated communication in the intermediate L2 class: A sociocultural case study. *CALICO Journal*, *19*(2), 249–277. doi: 10.1558/cj.v19i2.249-277

De la Fuente, M. J. (2003). Is SLA Interactionist Theory Relevant to CALL? A Study on the Effects of Computer-Mediated Interaction in L2 Vocabulary Acquisition. *Computer Assisted Language Learning*, *16*(1), 47. doi: 10.1076/call.16.1.47.15526

Deutschmann, M. & Molka-Danielsen, J.(2009). Future Directions for learning in Virtual Worlds. In J. Molka-Danielsen & M. Deutschmann (Eds.) *Learning and Teaching in the Virtual World of Second life* (pp. 185-190). Trondheim: Tapir Academic Press.

Deutschmann, M., & Panichi, L. (2009). Instructional Design, Teacher Practice and Learner Autonomy. In J. Molka-Danielsen & M. Deutschmann (Eds.), *Learning and Teaching in the Virtual World of Second Life* (pp. 27–44). Trondheim: Tapir Academic Press.

Deutschmann, M., Panichi, L., & Molka-Danielsen, J. (2009). Designing oral participation in second life - a comparative study of two language proficiency courses. *ReCALL*, *21*(2), 206–226. doi: 10.1017/S0958344009000196

Donaldson, R. P., & Kötter, M. (1999). Language Learning in Cyberspace : Teleporting the Classroom into the Target Culture. *CALICO Journal*, *16*(4), 531–558. Doi: 10.1558/cj.v16i4.531-557

Dörnyei, Z., & Scott, M. L. (1997). Communication Strategies in a Second Language: Definitions and Taxonomies. *Language Learning*, *47*, 173–210. doi: 10.1111/0023-8333.51997005

Doughty, C. (1991). Second language instruction does make a difference: evidence from an empirical study of SL relativisation. *Studies in Second Language Acquisition*, *13*, 431–469. doi: 10.1017/S0272263100010287

Dowd, R. O. (2003). Understanding the “other side”: Intercultural learning in a Spanish-English e-mail exchange. *Language Learning & Technology*, *7*(2), 118–144. Retrieved from http://llt.msu.edu/vol7num2/odowd/

Downey, S. (2014). History of the (Virtual) Worlds. *The Journal of Technology Studies*, *XL*(2), 54–66. doi: 10.1016/S0022-3913(12)00047-9

Dudeney, G., & Ramsay, H. (2009). Overcoming the Entry Barriers to Second Life in Higher Education. In C. Wankel & J. Kingsley (Eds.), *Higher Educations in Virtual Worlds* (pp. 11–28). Warrington: Emerald Group Publishing.

Egbert, J., & Petrie, G. M. (2005). *CALL Research Perspectives*. *Applied Linguistics*. Mahwah: Lawrence Erlbaum.

Ellis, R. (1985). *Understanding second language acquisition*. Oxford: Oxford University Press.

Ellis, R. (1990). *Instructed Second Language Acquisition*. Oxford: Blackwell.

Ellis, R. (1999). *Learning a Second Language through Interaction*. Amsterdam: John Benjamins.

Ellis, R. (2003). *Task-based Language Learning and Teaching*. Oxford: Oxford University Press.

Faerch, C., & Kasper, C. (1983). Plans and strategies in foreign language learning communication. In C. Faerch & G. Kasper (Eds.), *Strategies in Interlanguage Communication*. London: Longman.

Faerch, C., & Kasper, G. (1980). Processes and strategies in foreign language learning and communication. *Interlanguage Studies Bulletin*, *5*, 47–118. Retrieved from http://files.eric.ed.gov/fulltext/ED213247.pdf

Felix, U. (2003). Pedagogy on the line: identifying and closing the missing links. In U. Felix (Ed.), *Language Learning Online. Towards Best Practice.* (pp. 147–170). Lisse: Swets & Zelinger.

Foster, P., & Ohta, A. S. (2005). Negotiation for meaning and peer assistance in second language classrooms. *Applied Linguistics*, *26*(3), 402–430. doi: 10.1093/applin/ami014

Friedman, D., Steed, A., & Slater, M. (2007). Spatial Social Behavior in Second Life, 1–12. doi: 10.1007/978-3-540-74997-4_23

Goffman, E. (1963). *Behavior in Public Places*. New York: Free Press.

González, D.; Palomeque, C.; Sweeney, P. (2011). Teaching Spanish in Second Life. In M. Thomas (Ed.), *Digital Education. Opportunities for Social Collaboration* (pp. 143–166). New York: Palgrave Macmillan.

Goodwin, C. (2000). Action and embodiment within situated human interaction. *Journal of Pragmatics*, *32*, 1489–1522. doi:10.1016/S0378-2166(99)00096-X

Gowans, S. (2011). Communication Strategy Use : An Exploratory Case Study of an EFL Lesson in Second Life (Master's thesis, University of Edinburgh, United Kingdom) Retrieved from https://www.era.lib.ed.ac.uk/handle/1842/6101

Gumperz, J. J. (1999). On interactional sociolinguistic method. In S. Sarangi & C. Roberts (Eds.), *Talk, Work and Institutional Order. Discourse in Medical, Mediation and Management Settings.* (pp. 453–471). Berlin: Mouton de Gruyter.

Gumperz, J. J., & Hymes, D. (1964). The Ethnography of Communication. *Special issue of American Anthropologist, 66(6): Part II*.

Halliday, M. (1978). Language as a Social Semiotic. London: Edward Arnold.

Hammersley, M., & Atkinson, P. (1983). *Ethnography: Principles in Practice.* London: Routledge.

Hampel, R., & Hauck, M. (2004). Towards an effective use of audio conferencing in distance language courses, *8*(1), 66–82. Retrieved from http://llt.msu.edu/vol8num1/hampel/

Hampel, R., & Hauck, M. (2006). Computer-mediated language in multimodal virtual learning spaces. *The JALT CALL Journal*, *2*(2), 3–18. Retrieved from http://oro.open.ac.uk/5418/1/Hampel_%252526_Hauck.pdf

Hampel, R., & Stickler, U. (2012). The use of videoconferencing to support multimodal interaction in an online language classroom. doi: 10.1017/S095834401200002X

Hatch, E. (1992). *Discourse and language education*. *Cambridge language teaching library*. Cambridge: Cambridge University Press.

Herring, S. (Ed.). (1996). *Computer-mediated communication: linguistic, social, and cross-cultural perspectives*. Wilrijk: John Benjamins.

Herring, S. (2007). A Faceted Classification Scheme for Computer-Mediated Discourse. *Language@Internet*. Retrieved from http://www.languageatinternet.org/articles/2007/761

Herring, S. C. (1999). Interactional coherence in CMC. *Journal of Computer-Mediated Communication*, *4*(4), 612–634. doi: 10.1111/j.1083-6101.1999.tb00106.x

Herring, S. C. (2001). Computer-Mediated Discourse. In H. Schiffrin, D. Tannen, D. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 1–24).

Herring, S. C. (2002). Computer-mediated communication on the Internet. In B. Cornin (Ed.), *Annual review of information science and technology* (pp. 109–168). Medford, NJ: Information Today.

Herring, S. C. (2004). Computer-mediated discourse analysis: An approach to researching online behavior. In R. Kling & J. H. Gray (Eds.), *Designing for Virtual Communities in the Service of Learning* (pp. 338–376). New York: Cambridge University Press.

Herring, S. C. (2015). New frontiers in interactive multimodal communication. In A. Georgopoulou & T. Spilloti (Eds.), *The Routledge handbook of language and digital communication* (pp. 398–402). London: Routledge.

Hitchcock, G., & Hughes, D. (1995). *Research and the teacher: A qualitative introduction to school-based research*. London: Routledge.

Hubbard, P. (2009). General Introduction. In P. Hubbard (Ed.), *Computer Assisted Language Learning: Critical Concepts in Linguistics*. London: Routledge.

Hubbard, P. (2015). An Invitation to CALL. Retrieved August 20, 2015, from http://web.stanford.edu/~efs/callcourse2/

Hymes, D. H. (1974). *Foundations in sociolinguistics: An ethnographic approach.* Philadelphia: University of Pennsylvania Press.

Jaeger, B., & Helgheim, B. (2009). Role Play study in Purchase Management Class. In J. Molka-Danielsen & M. Deutschmann (Eds.), *Learning and Teaching in the Virtual World of Second Life* (pp. 115–124). Trondheim: Tapir Academic Press.

Jepson, K. (2005). Conversations—and negotiated interaction—in text and voice chat rooms. *Language Learning & Technology*, *9*(3), 79–98. Retrieved from http://www.llt.msu.edu/vol9num3/jepson/default.html

Jewitt & Kress. (2003). A multimodal approach to research in education. In S. Goodman, T. Lillis, J. Maybin, & N. Mercer (Eds.), *Language, Literacy and Education: A Reader* (pp. 277–292). Stoke-on-Trent: Trentham Books in association with the Open University.

Jones, R. H., & Norris, S. (2005). Discourse as action / discourse in action. In R. H. Jones & S. Norris (Eds.), *Discourse in Action: Introducing Mediated Discourse Analysis* (pp. 3–14).

Kern, R. (2006). Perspectives on technology in learning and teaching languages. *TESOL Quarterly*, *1*(40), 183–210. doi: 10.2307/40264516

Kern, R. G. (1995). Restructuring Classroom Interaction with Networked Computers: Effects on Quantity and Characteristics of Language Production. *The Modern Language Journal*, *79*(4), 457–476. doi: 10.2307/329999

Kern, R. G., & Warshauer, M. (2000). Theory and practice of networked-based language teaching. In M. Warshauer & R. G. Kern (Eds.), *Network-based language teaching: concepts and practice*. Cambridge: Cambridge University Press.

Kingsley, J. & Wankel, C. (2009). Introduction. In C. Wankel & J. Kingsley (Eds.), *Higher Education in Virtual Worlds: Teaching and Learning in Second Life*. Warrington: Emerald Group Publishing.

Kollock, P., & Smith, M. (1996). Managing the virtual commons: Cooperation and conflict in computer communities. In S. C. Herring (Ed.), *Computer-mediated communicaiton:*

linguistic, social and cross-cultural perspectives (pp. 109–128). Philadelphia: John Benjamins.

Kötter, M. (2001). Developing distance language learners' interactive competence - Can synchronous audio do the trick? *International Journal of Educational Telecommunications*, *7*(4), 327–353.

Kötter, M. (2003). Negotiation of meaning and code-switching in online tandems. *Language Learning & Technology*, (7(2)), 145–172. Retrieved from http://www.editlib.org/p/8412

Kötter, M. (2003). Negotiation of Meaning and Codeswitching in Online Tandems. *Language Learning & Technology*, *7*(2), 145–172. Retrieved from http://llt.msu.edu/vol7num2/kotter/

Krashen. (1982). Secong language acquisition theory. In *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon.

Kress, G. (1998). Visual and verbal modes of representation in electronically mediated communication: the potentials of new forms of text. In I. Snyder & M. Joyce (Eds.), *Page To Screen: taking literacy into the electronic era* (pp. 53–79). London: Routledge.

Kress, G. (2000). Multimodality. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 182–202). London: Routledge.

Kress, G. (2009). *Multimodality: A social semiotic approach to communication*. London: Routledge.

Kress, G. (2010). *Multimodality: A Social semiotic approach to contemporary communication*. London: Routledge.

Kress, G., Leite-García, R., & van Leeuwen, T. (2000). Semiótica discursiva. In T. van Dijk (Ed.), *El discurso como estructura y proceso* (pp. 373–416). Barcelona: Gedisa.

Kress, G., & van Leeuwen, T. (1996). *Reading images: The grammar of visual design*. London: Routledge.

Kress, G., & van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of contemporary communication*. London: Arnold.

Kress, G., & van Leeuwen, T. (2006). *Reading images*. London: Routledge.

Krikorian, D. H., Lee, J., Chock, T. M., & Harms, C. (2000). Isn't that spatial?: Distance and communication in a 2-D virtual Environment. *Journal of Computer-Mediated Communication*, *5*(4). doi: 10.1111/j.1083-6101.2000.tb00349.x

Lamy, M.-N., & Goodfellow, R. (1999). "Reflective Conversation" in the Virtual Classroom. *Language Learning & Technology*, *2*(2), 43–61. Retrieved from: http://www.llt.msu.edu/vol2num2/article2/

Lantolf, J., & Appel, G. (Eds.). (1994). Theoretical framework: An introduction to Vygotskian approaches to second language research. In *Vygotskian approaches to second language research* (pp. 1–32). Norwood, NJ: Ablex.

Lapadat, J. (2007). Discourse Devices Used to Establish Community, Increase Coherence, and Negotiate Agreement in an Online University Course. *The Journal of Distance Education / Revue de l'Éducation À Distance*, *21*(3), 59–92. Retrieved from: http://www.ijede.ca/index.php/jde/article/view/32

Laplantine, F. (1996). *La description ethnographique.* Paris: Nathan Université.

Larsen-Freeman, D., & Long, M. (1991). *An introduction to second language acquisition research*. New York: Longman.

Lee, L. (2001). Online interaction: negotiation of meaning and strategies used among learners of Spanish. *ReCALL*. doi: 10.1017/S0958344001000829a

Lee, L. (2002). Enhancing learners' communication skills through synchronous electronic interaction and task-based instruction. *Foreign Language Annals*, *35*(1), 0. doi:10.1111/j.1944-9720.2002.tb01829.x

Lee, L. (2002). Synchronous online exchanges: A study of modification devices on non-native discourse. *System*, *30*(3), 275–288. doi:10.1016/S0346-251X(02)00015-5

Lee, S., Groves, P., Stephens, C., & Armitage, S. (1999). Guide to online teaching: existing tools and projects. MUDs, MOOs, WOOs and IRC. Retrieved from: http://projects.oucs.ox.ac.uk/jtap/reports/teaching/chapter5.html

Lemke, J. L. (2002). Travels in hypermodality. *Visual Communication*, *1*(3), 299–325. doi: 10.1177/147035720200100303

Levy, M. (1997). *Computer-assisted language learning: context and conceptualization*. *World Wide Web Internet And Web Information Systems* (Vol. 2). doi: 10.2307/417519

Levy, M & Stockwell, G. (2006). *CALL Dimensions*. Mahwah, NJ: Lawrence Erlbaum.

Long, M. H. (1981). Questions In Foreigner Talk Discourse. *Language Learning*, *31*(1), 135–157. doi: 10.1111/j.1467-1770.1981.tb01376.x

Long, M. H. (1983). Native speaker/non-native speaker conversation and the negotiation of comprehensible input. *Applied Linguistics*, *4*(2), 126–141. doi: 10.1093/applin/4.2.126

Long, M. H. (1985). Input and second language acquisition theory. In C. Gass & S; Madden (Eds.), *Input in second language acquisition* (pp. 377–393). Cambridge: Newbury House.

Long, M; Sato, C. J. (1983). Classroom foreigner talk discourse: forms and functions of teachers' questions. In M. H. Seliger, & M. Long (Ed.), *Classroom-oriented research on second language acquisition* (pp. 268–285). Rowley, MA: Newbury House.

Long, M.; Pica, T. (1986). The linguistic and conversational performance of experienced and inexperienced teachers. In R. R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 85–98). Rowley, MA: Newbury House.

Love, E., Ross, S. C., & Wilhelm, W. (2009). Opportunities and Challenges for Business Educations in Second Life. In C. Wankel & J. Kingsley (Eds.), *Higher Educations in Virtual Worlds* (pp. 65–82). Warrington: Emerald Group Publishing.

Lynch, T. (1996). *Communication in the language classroom*. Oxford: Oxford University Press.

Martinec, R. (2000). Types of Processes in Action. *Semiotica*, *130*(3/4), 243–268. doi:10.1515/semi.2000.130.3-4.243

Martinec, R. (2001). Interpersonal Resources in Action. *Semiotica*, *135*(1/4), 117–145. doi: 10.1515/semi.2001.056

Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge: Harvard University Press.

Miles, M. B., & Huberman, A. M. (1984). Qualitative data analysis: A sourcebook of new methods. Thousand Oaks: SAGE.

Molka-Danielsen, J.; Richardson, D.; Carter, B. (2007). Teaching Languages in a Virtual World. In *Nokobit Proceedings*. Oslo: Tapir Academic Press.

Morand, D. A., & Ocker, R. J. (2003). Politeness Theory and Computer-Mediated Communication : A Sociolinguistic Approach to Analyzing Relational Messages. *Proceedings of the 36th Hawaii International Conference on System Sciences*. doi. 10.1109/HICSS.2003.1173660

Morris, F. (2005). Child-to-child interaction and corrective feedback in a computer mediated L2 class. *Language Learning & Technology*, *9*(1), 29–45. Retrieved from: http://llt.msu.edu/vol9num1/morris/

Murray, D. E. (2000). Protean communication: The language of computer-mediated communication. *TESOL Quarterly*, *34*(3), 397–421. doi: 10.2307/3587737

Naper, I. (2011). Conversation in a Multimodal 3D Virtual Environment. *Language@Internet*, *8*(7). Retrieved from: http://www.languageatinternet.org/articles/2011/Naper

Negretti, R. (1999). Web-based activities and SLA: A conversation analysis research approach. *Language Learning & Technology*, *3*(1), 75–87. Retrieved from http://www.llt.msu.edu/vol3num1/negretti/

Nisbet, J., & Watt, J. (1984). Case study. In A. Fox, J. Goodey, & S. Goulding (Eds.), *Conducting small-scale investigations in educational management* (pp. 79–92). London: Harper & Row.

Norris, S. (2004). *Analyzing Multimodal Interaction. A methodological framework*. New York: Routledge.

Nunan, D. (1989). *Designing tasks for the communicative classroom*. Cambridge: Cambridge University Press.

O'Halloran, K. L. (2004). Visual semiosis in film. In K. O'Halloran (Ed). *Multimodal discourse analysis: Systemic functional perspective*. (pp 109-130). London: Continuum.

O'Halloran, K. L. (2005). *Mathematical Discourse: Language, Symbolism and Visual Images*. New York & Londong: Routledge.

O'Halloran, K. L. (2011). Multimodal Discourse Analysis. In K. Hyland & B. Paltridge (Eds.), *Companion to Discourse Analysis* (p. 120-137). London & New York: Continuum.

O'Toole, M. (1994). *The Language of Displayed Art*. London & New York: Routledge.

Oliver, R. (1995). Negative Feedback in Child NS-NNS Conversation. *Studies in Second Language Acquisition*. doi: 10.1017/S0272263100014418

Örnberg, T. (2005). Multimodality in a Three-dimensional Voice Chat. In *Proceedings of the 3rd Conference on Multimodal Communication, Papers in Theoretical Linguistics. Göteborg University.*

Osman, G., & Herring, S. C. (2007). Interaction, facilitation, and deep learning in cross-cultural chat: A case study. *Internet and Higher Education*, *10*(2), 125–141. doi: 10.1016/j.iheduc.2007.03.004

Paramskas, D. (1999). The shape of computer-mediated communication. In K. Cameron (Ed.), *CALL: Media, design and applications* (pp. 13–34). Lisse: Swets & Zelinger.

Pasfield-Neofitou, S. E. (2007). Textual features of intercultural Internet chat between learners of Japanese and English. *CALL EJ-Online*, *9*(1). Retrieved from: http://callej.org/journal/9-1/pasfield-neofitou.html

Payne, J. S., & Whitney, P. J. (2002). Developing L2 oral proficiency through synchronous CMC: Output, working memory, and interlanguage development. *CALICO Journal*, *20*, 7–32. Retrieved from https://www.calico.org/html/article_327.pdf

Pelletieri, J. (2000). Negotiation in cyberspace: the role of chatting in the development of grammatical competence. In R. Warshauer & M.; Kern (Ed.), *Network-based language teaching: concepts and practice* (pp. 59–86). New York: Cambridge.

Peterson, M. (2001). MOOs and second language acquisition: Towards a rationale for MOO-based learning. *Computer Assisted Language Learning*, *14*(5), 443–459. doi: 0.1076/call.14.5.443.5773

Peterson, M. (2005). Learning interaction in an avatar-based virtual environment: a preliminary study. *Journal Pacific Association for Computer Assisted Language Learning*, *1*(1), 29–40. doi:10.1.1.104.5544

Peterson, M. (2006). Learner interaction management in an avatar and chat-based virtual world. *Computer Assisted Language Learning*, *19*(1), 79–103. doi: 10.1080/09588220600804087

Peterson, M. (2008). *An investigation of learner interaction in a MOO-based virtual environment*. (Doctoral thesis, University of Edinburgh, United Kingdom). Retrieved from https://www.era.lib.ed.ac.uk/handle/1842/3439

Peterson, M. (2010). Learner participation patterns and strategy use in Second Life: an exploratory case study. *ReCALL*, *22*(03), 273–292. doi: 10.1017/S0958344010000169

Pica, T. (1994). Research on Negotiation: What does it reveal about second language learning conditions, processes and outcomes? *Language Learning*, *44*(3), 493–527. doi: 10.1111/j.1467-1770.1994.tb01115.x

Pica, T. (1996). Second Language Learning Through Interaction: Multiple Perspectives. *Working Papers in Educational Linguistics*, *12*(1), 1–22. Retrieved from http://eric.ed.gov/?id=ED401756

Poyatos, F. (Ed.). (1992). *Advances in nonverbal communication*. Amsterdam: John Benjamins.

Pujolà, J. T. (2001). Did CALL feedback feed back? Researching learners' use of feedback. *ReCALL*. doi: 10.1017/S0958344001000817

Pujolà, J. T. (2002). CALLing for help: researching language learning strategies using help facilities in a web-based multimedia program. *ReCALL*. doi: 10.1017/S0958344002000423

Pujolà, J. T., & Palomeque, C. (2010). Developing a Multimodal Transcription to Account for Interaction in 3D Virtual Worlds: The 3M Method. In J. L. Bueno et al. (Eds.), *Analizar Datos. Describir Variación* (pp. 134-145). Vigo, Spain: University of Vigo, Servizo de Publicacións. Retrieved from http://dialnet.unirioja.es/servlet/articulo?codigo=3407693

Rourke, L., Anderson, T., Garrison, D. R., & Archer, W. (1999). Assessing social presence in asynchronous test-based computer conferencing. *Journal of Distance Education / Revue de l'ducation Distance*, *14*(2), 51–70. Althabasca University Press.

Salaberry, M. R. (2000). L2 morphosyntactic development in text-based computer-mediated communication. *Computer Assisted Language Learning*, *13*, 5–27. doi: 10.1076/0958-8221(200002)13:1;1-K;FT005

Salaberry, M. R. (2000). Pedagogical design of computer mediated communication tasks: Learning objectives and technological capabilities. *The Modern Language Journal*, *84*(1), 28–37. doi: 10.1111/0026-7902.00050

Salmon, G. (2009). The future for (second) life and learning. *British Journal of Educational Technology*, *40*(3), 526–538. doi: 10.1111/j.1467-8535.2009.00967.x

Satar, H. M. (2008). Multimodal Computer Mediated Communication. In M. Edwardes (Ed) *Proceedings of the BAAL Annual Conference* (pp. 95–98). London: Scitsiugnil Press.

Saville-Troike, M. (2003). *The ethnography of communication. An introduction.* Oxford: Blackwell.

Schiffrin, D. (1994). The textual and contextual basis of discourse. *Semiotica*, *102*(1), 101–124.

Schiffrin, D.; Tannen, D.; Hamilton, H. (2001). *The Handbook of Discourse Analysis*. Oxford: Blackwell.

Schmidt, R. (1994). Deconstructing consciousness in search of useful definitions for applied linguistics. In J. H. Hulstijn & R. Schmidt (Eds.) *Consciousness and second language learning: Conceptual, methodological and practical issues in language learning and teaching, Thematic issues of AILA Review*, *11,* 11–26.

Schroeder, R. (2008). Defining Virtual Worlds and Virtual Environments. *Journal of Virtual Worlds Research*, *1*(1), 1–3. Retrieved from https://journals.tdl.org/jvwr/index.php/jvwr/article/viewFile/294/248

Scollon, R., & LeVine, P. (2004). Multimodal Discourse Analysis as the Confluence of Discourse and Technology. In *Discourse and Technology. Multimodal Discourse Analysis.* (pp. 1–6). Washington: Georgetown University Press.

Scollon, R., & Scollon, S. (2001). *Intercultural Communication: A Discourse Approach*. Oxford: Blackwell.

Scollon, R., & Scollon, S. W. (2003). *Discourse in place: Language in the material world.* London: Routledge.

Seedhouse, P. (2004). *The Interactional Architecture of the Second Language Classroom: A conversational Analysis Perspective*. Oxford: Blackwell.

Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics*, *10*(3), 219–231. doi: 10.1515/iral.1972.10.1-4.209,

Shield, L. (2003). MOO as a language learning tool. In U. Felix (Ed.), *Language Learning Online. Towards Best Practice.* (pp. 97–122). Lisse: Swets & Zelinger.

Silva, K. (2008). Second Life. *TESL-EJ*, *12*(1), 1–6. doi: 10.3169/itej.62.1274

Simpson, J. (2005). Learning electronic literacy skills in an online language learning community. *Computer Assisted Language Learning*, *18*(4), 327–345. doi:10.1080/09588220500335463

Skehan, P. (1998). *A cognitive approach to language learning*. Oxford: Oxford University Press.

Smart, J., Cascio, J., & Paffendorf, J. (2007). Metaverse Roadmap: Pathways to the 3D Web. *Metaverse: A Cross-Industry Public Foresight Project*. Retrieved from http://www.metaverseroadmap.org/MetaverseRoadmapOverview.pdf

Smith, B. (2003). Computer-Mediated negotiated interaction: An expanded model. *The Modern Language Journal*, (87), 38–57. doi: 10.1111/1540-4781.00177

Söntgens, K. (1999). Language learning via email. Autonomy through collaboration. In K. Cameron (Ed.), *CALL & the learning community* (pp. 38–57). Exeter: Elm Bank.

Sotillo, S. (2000). Discourse Functions and Syntactic Complexity in Synchronous and Asynchronous Communication. *Language Learning & Technology*. Retrieved from http://llt.msu.edu/vol4num1/sotillo/

Sotillo, S. (2005). Learning Activities in NS-NNS and NNS-NNS Dyads. *CALICO Journal*, *22*(3), 467–496. doi: 10.11139/cj.22.3.467-496

Spiro, R, J., Feltovich, P. J., Jacobson, M. J., & Coulson, R. L. (1992). Cognitive flexibility, constructivism and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. In T. Duffy & D. Jonassen (Eds.), *Constructivism and the Technology of Instruction.* Hillsdale, NJ: Erlbaum.

Stern, H. H. (1983). *Fundamental concepts of language teaching*. New York: Oxford University Press.

Stickler, U., Batstone, C., Duensing, A., & Heins, B. (2005). Distance and virtual distance: Preliminary results of a study of interaction patterns in synchronous audio graphic CMC and face-to-face tutorials in beginners' language tutorials. In Proceedings of the 2004 International Symposium on Applied Linguistics and Language Teaching, Beijing and

Shanghai, Aug 2004, Beijing and Shanghai, China. Retrieved from http://oro.open.ac.uk/5691/

Stickler, U., & Emke, M. (2011). LITERALIA: Towards developing intercultural maturity online, *15*(1), 147–168. Retrieved from http://llt.msu.edu/issues/february2011/stickleremke.pdf

Stockwell, G., & Harrington, M. (2003). The Incidental Development of L2 Proficiency in NS-NNS Email Interactions. *CALICO Journal*, *20*(2), 337-359. doi: 10.1558/cj.v20i2.337-359

Stockwell, G. R. (2003). What do learners acquire through email interactions with native speakers? *LET Kyushu-Okinawa Bulletin*, *3*, 31–42.

Svensson, P. (2003). Virtual Worlds as arenas for language learning. In U. Felix (Ed.), *Language Learning Online. Towards Best Practice.* (pp. 123–146). Lisse: Swets & Zelinger.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235–356). Rowley, MA: Newbury House.

Sweeney, P. (2009). The classroom is dead, long live the classroom. Paper presented at the SL Languages Conference. Retrieved from http://www.slideshare.net/eduworlds/slanguages-2009-classroom-is-dead-long-live-the-classroom-paul-sweeney-v2

Sweeney, P., & Palomeque, C. (2010). Task Design in Virtual Worlds: Towards a Frame of Reference. Paper presented at the 44th IATEFL Conference, Harrogate, UK. Retrieved

from: http://www.slideshare.net/eduworlds/task-design-in-virtual-worlds-towards-a-frame-of-reference-v10e-paul-sweeney-cristina-palomeque

Sweeney, P.; Palomeque, C.; González, D.; Speck, C., Mackichan, P. & Canfield, D. (2010). Task Design for Language Learning in an Embodied Environment. In J. Vincenti, G. & Braman (Ed.), *Teaching through Multi-User Virtual Environments: Applying Dynamic Elements to the Modern Classroom*. Hershey, PA: IGI Global.

Tardiff, C. (1994). Classroom teacher talk in early immersion. *The Canadian Modern Language Review*, *50*, 466–481. Retrieved from: https://www.utpjournals.com/Canadian-Modern-Language-Review.html

Tarone, E. (1977). Conscious communication strategies in interlanguage: A progress report. In H. D. Brown, C. A. Yorio, & R. C. Crymes (Eds.), *TESOL '77* (pp. 194–203). Washington, DC: TESOL.

Tarone, E. (1980). Communication strategies, foreigner talk, and repair in interlanguage 1. *Language Learning*, *30*(2), 417 – 431. doi: 10.1111/j.1467-1770.1980.tb00326.x

Tarone, E., Cohen, A. D., & Dumas, G. (1976). A closer look at some interlanguage terminology: A framework for communication strategies. *Working Papers on Bilingualism*, *9*, 76–90.

Thorne, S. (2000). Beyond bounded activity systems: Heterogeneous cultures in instructional uses of persistent conversation. In S. Herring & T. Erickson (Eds.), *The proceedings of the thirty-third Hawaii International Conference on Systems Science*. New York: IEEE Press.

Tomlin, R. S., & Villa, V. (1994). Attention in Cognitive Science and Second Language Acquisition. *Studies in Second Language Acquisition*, 16(2), 183-203. doi: 10.1017/S0272263100012870

Toyoda, E., & Harrison, R. (2002). Categorization of Text Chat Communication between Learners and Native Speakers of Japanese. *Language Learning & Technology*, *6*(1), 82–99. Retrieved from http://llt.msu.edu/vol6num1/toyoda/default.html

Tudini, V. (2003). Using native speakers in chat. *Language Learning and Technology*, *7*(3), 141–159. Retrieved from http://llt.msu.edu/vol7num3/tudini/

Ulicsak, M., & Wright, M. (2010). *Games in Education: Serious Games*. *A FutureLab Literature Review*. Bristol: Futurelab. Retrieved from http://www.futurelab.org.uk/projects/games-in-education

Van Leeuwen, T. (1999). *Speech, Music, Sound*. London: Macmillan.

Van Lier, L. (1988). *The Classroom and the Language Learner*. New York: Longman.

Váradi, T. (1973). Strategies of Target Language Learner Communication: Message Adjustment. *International Review of Applied Linguistics*, *18*, 59–72. Retrieved from: http://www.degruyter.com/view/j/iral

Verhulsdonck, G., & Morie, J. F. (2009). Virtual Chironomia: Developing Standards for Non-verbal Communication in Virtual Worlds. *Journal of Virtual Worlds Research*, *2*(3), 3-10. doi: http://dx.doi.org/10.4101/jvwr.v2i3.657

Von der Emde, S., Schneider, J., & Kötter, M. (2001). Speaking : Transforming Technically Language Learning through Virtual Learning Environments (MOOs). *The Modern Language Journal*, *85*(2), 210–225. doi: 10.1111/0026-7902.00105

Vygotsky, L. S. (1978). Interaction between learning and development. In M. Cole, V. John-Steiner, S. Scribner & E. Souberman (Eds.), *Mind in Society: The Development of Higher Psychological Processes* (pp. 79–91). Cambridge: Harvard University Press.

Walsh, S. (2006). *Investigating Classroom Discourse*. New York: Routledge.

Walsh, S. (2011). *Exploring Classroom Discourse*. *Routhledge Introductions to Applied Linguistics*. New York: Routledge.

Walsh, S. (2012). Conceptualising classroom interactional competence. *Novitas-ROYAL (Research on Youth and Language)*, *6*(1), 1–14. Retrieved from http://www.novitasroyal.org/Vol_6_1/Walsh.pdf

Wang, A. (2014). Managing student participation : Teacher strategies in a virtual EFL course, *JALT CALL Journal*, *10*(2), 105–125. Retrieved from http://journal.jaltcall.org/articles/10_2_Wang.pdf

Wang, A. (2015). FACILITATING PARTICIPATION : TEACHER ROLES IN A MULTIUSER VIRTUAL LEARNING ENVIRONMENT, *Language Learning & Technology*, *19*(2), 156–176. Retrieved from http://llt.msu.edu/issues/june2015/wang.pdf

Wang, A., Deutschmann, M., & Steinvall, A. (2013). Towards a model for mapping participation: Exploring factors affecting participation in a telecollaborative learning scenario in Second Life. *JALT CALL Journal*, *9*(1), 3–22.

Warburton, S. (2008). Herding cats. Retrieved June 20, 2015, from http://warburton.typepad.com/liquidlearning/2008/11/

Warburton, S. (2009). Second Life in higher education: Assessing the potential for and the barriers to deploying virtual worlds in learning and teaching. *British Journal of Educational Technology*, *40*(3), 414–426. doi: 10.1111/j.1467-8535.2009.00952.x

Warschauer, M., & Healey, D. (1998). Computers and language learning: an overview. *Language Teaching,* 31(2), 57-71. doi: 10.1017/S0261444800012970

Warshauer, M. (1996). Computer assisted language learning: an introduction. In S. Fotos (Ed.), *Multimedia Langauge Teaching* (pp. 57–71). Tokyo: Logos International.

Warshauer, M. (1997). Computer-mediated collaborative learning: Theory and practice. *Modern Langauge Journal*, (81), 470–481. doi: 0.1111/j.1540-4781.1997.tb05514.x

Werry, C. (1996). Linguistic and interactional feature of internet relay chat. In S. C. Herring (Ed.), *Computer-mediated communication: linguistic, social and cross-cultural perspectives* (pp. 47–64). Wilrijk: John Benjamins.

Whitehead, T. L. (2004). What is Ethnography? Methodological, Ontological and Epistemological Attributes. *Cultural Ecology of Health and Change*, 1–29. Retrieved from http://www.cusag.umd.edu/documents/workingpapers/epiontattrib.pdf

Wigham, C. (2012). The interplay between nonverbal and verbal interaction in synthetic worlds which supports verbal participation and production in a foreign language (Doctoral thesis, Université Blaise Pascal). Retrieved from https://tel.archives-ouvertes.fr/tel-00762382/

Williamson, R. (2007). El diseño de un corpus multimodal. *Estudios de Lingüística Aplicada*, *25*(46), 207–258. Retrieved from http://ela.cele.unam.mx/doctos/ela46/ELA46txt9.pdf

Willis, D. & Willis, J. (2007). *Doing Task-Based Teaching*. Oxford: Oxford University Press.

Xie, B. (2008). The mutual shaping of online and offline social relationships. *Information Research*, *13*(3). Retrieved from http://www.informationr.net/ir/13-3/paper350.html

Yee, N., Bailenson, J. N., Urbanek, M., Chang, F., & Merget, D. (2007). The unbearable likeness of being digital: the persistence of nonverbal social norms in online virtual environments. *Cyberpsychology & Behavior : The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, *10*(1), 115–121. doi: 10.1089/cpb.2006.9984

Yin, R. K. (2003). *Case study research: Design and methods*. Thousand Oaks: Sage.

Appendix A: Glossary

Glossary of the main types of online worlds (adapted from Downey, 2014, p. 62)

World	Definition
MUD (aka MUDI)	Multi-User Dungeon, arguably the first virtual world.
MOO	MUD Object Oriented provided a robust scripting language that allowed users to create in-world objects for social-oriented worlds.
Virtual World	Generic, overarching term used to describe online environments (text or graphical) in which users collaborate, communicate for the purpose of gaming and/or socializing.
MMO	Massively Multiplayers Online. A generic term like virtual worlds.
MMOG	Massively Multiplayers Online Game. A subset of MMOs specifically oriented towards gaming.
MMORPG	Massively Multiplayers Online Role Playing Game. A subset of MMOGs specifically oriented towards role playing games such as World of Warcraft.
MUVE	Multi-User Virtual Environment. Term used by Chris Dede to designate social virtual worlds.

Appendix B: English Level 1 syllabus

CETT | Tourism & Hospitality Education / Research | UNIVERSITAT DE BARCELONA

Comunicació en anglès en Turisme: Nivell iniciació

2009

Pla docent

Bloc Idiomes

Índex:

PART I: VISIÓ GLOBAL DE L'ASSIGNATURA 3

I. Descripció i contextualització general de l'assignatura 3

I. 1 Identificació i contextualització de l'assignatura 3

I.2 Contextualització curricular 4

I.3 Vinculació amb l'àmbit professional 5

II. Competències genèriques i específiques de l'assignatura 5

II. 1 Competències genèriques 5

II. 2 Competències específiques 5

III. Objectius d'aprenentatge 6

III. Continguts temàtics 11

V. Activitats formatives i dedicació de l'alumne 12

VI. Sistema d'avaluació 13

VII. Cronograma orientatiu 17

VIII. Bibliografia 18

PART I: VISIÓ GLOBAL DE L'ASSIGNATURA

I. Descripció i contextualització general de l'assignatura

I. 1 Identificació i contextualització de l'assignatura			
Denominació	*Comunicació en anglès en Turisme: Nivell iniciació*		
Curs	*1er*		
Professor responsable de l'Assignatura	*Montserrat Iglesias* *montserrat.iglesias@cett.es*	***Professors Titulars***	

Tipus	*Obligatòria*	***Crèdits ETCS***	*9*	
Distribució de crèdits	**Hores de Docència** *120*		**Hores de treball autònom** *105*	**Total hores** *225*
Menció vinculada	--			
Intensificació vinculada	--			

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

Breu descripció de l'assignatura:

El Turisme és comunicació: comunicació amb clients o amb altres professionals, comunicació en diferents contextos i a diferents nivells, comunicació en llengües diferents amb gent de procedències diferents. Una llengua estrangera no és només una eina que permet la realització professional, sinó que és també un vehicle que fa possible les relacions humanes.

En l'actualitat, l'anglès és sense cap dubte una de les vies de comunicació més esteses arreu del món, principalment al sector turístic. Per tant, qui desitgi formar part d'aquest sector necessita tenir un bon domini de l'anglès i conèixer aspectes sociolingüístics relacionats amb aquest idioma.

L'objectiu general d'aquesta assignatura és dotar als alumnes de les eines que necessiten per poder utilitzar la llengua anglesa com a mitjà de comunicació en situacions professionals, en situacions d'aprenentatge i com a mitjà d'expressió personal a un nivell intermedi. El punt de mira serà el desenvolupament de competències que possibilitin la capacitació professional en un entorn internacional, l'aprenentatge continuat i la mobilitat acadèmica i laboral.

Paraules clau:

Comunicació, anglès, nivell intermedi

I.2 Contextualització curricular

a) **Assignatures que s'ha d'haver cursat prèviament (prerequisits)**

--

b) **Assignatures recomanables de realitzar de forma complementària**

--

c) **Interrelacions amb altres matèries i assignatures**

Vinculada a les següents assignatures:

-Comunicació en anglès en Turisme: Nivell mig
-Comunicació en anglès en Turisme: Nivell avançat
-Comunicació en segona llengua estrangera
-Potenciació de la comunicació en llengua estrangera en turisme I
-Potenciació de la comunicació en llengua estrangera en turisme II

I.3 Vinculació amb l'àmbit professional

En el desenvolupament de tasques dins del sector turístic s'ha de poder utilitzar la llengua anglesa com a mitjà de comunicació en situacions professionals.

II. Competències genèriques i específiques de l'assignatura

II. 1 Competències genèriques

Codi	Competència
CG6	Dominar les tècniques de la comunicació oral i escrita per a la transmissió d'informació, idees i opinions
CG9	Treballar en un context internacional

II. 2 Competències específiques

Codi	Competència
CE16	Conèixer i manejar les tecnologies de la informació i els sistemes de gestió de la informació en turisme

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

III. Objectius d'aprenentatge

TEMA	OBJECTIUS ESPECÍFICS	CG6 OBJECTIUS GENERALS*												CG9 OBJECTIUS GENERALS*				CE16 OBJECTIUS GENERALS*	C
		1	2	3	4	5	6	7	8	13	14	15	16	17	9	10	11	12	18	
1	1.1 Donar la benvinguda	x	x				x			x	x				x	x	x	x		
	1.2 Fer presentacions personals	x	x	x			x	x	x	x	x		x	x						
	1.3 Prendre consciència de les diferències culturals														x	x	x	x		
	1.4 Donar informació al client en arribar	x	x				x	x		x	x									
2	2.1 Registrar el client en arribar a l'hotel	x	x				x	x		x	x				x	x	x	x		
	2.2 Donar informació sobre els diferents serveis de l'hotel	x	x				x	x		x	x									
	2.3 Conèixer l'organigrama del personal de l'hotel	x			x			x		x	x									
3	3.1 Donar informació turística	x	x			x	x	x		x	x									
	3.2 Recomanar i promocionar productes turístics	x	x				x	x	x	x	x		x							
	3.3 Escriure un fulletó turístic	x			x	x		x		x	x									
	3.4 Assessorar diferents tipus de clients en funció del seu perfil específic														x	x	x	x		
4	4.1 Descriure les tasques específiques d'un representant turístic	x	x	x			x	x	x	x	x									
	4.2 Rebre nous clients a la destinació	x	x				x			x	x									

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

	turística																		
	4.3 Rebre nous clients a la destinació turística atenent els formulismes culturals													x	x	x	x		x
5	5.1 Donar informació sobre la gastronomia del país	x	x				x	x		x	x		x						x
	5.2 Elaborar la carta del restaurant	x				x		x		x	x		x						x
	5.3 Solucionar queixes dels clients	x	x	x			x	x			x								x
	5.4 Recomanar plats i begudes atenent els costums de diversos països													x	x		x		x
6	6.1 Descriure destinacions turístiques rurals	x	x	x			x	x		x	x		x						x
	6.2 Extreure informació de les cartes de "feedback" dels clients	x			x			x		x	x		x	x					x
	6.3 Dissenyar documents de benvinguda per als nous clients	x			x		x			x	x		x						x
	6.4 Parlar del temps meteorològic	x	x				x	x			x		x						x
	6.5 Encoratjar als clients a tenir una actitud sostenible envers al medi ambient													x	x	x			x
7	7.1 Descriure monuments turístics	x	x	x			x	x		x	x		x						x
	7.2 Descriure festivals i esdeveniments d'interés turístic i cultural	x	x	x			x	x		x	x		x						x
	7.3 Adaptar el tracte a les diferents nacionalitats dels clients													x	x	x	x		x
8	8.1 Descriure les habilitats i tasques específiques del" tour manager" i del guia turístic	x	x	x	x		x	x	x	x	x		x						x
	8.2 Explicar els arranjaments d'un circuit turístic als clients	x	x				x	x		x	x		x						x

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

	evitar malentesos																		
11	11.1 Conèixer el llenguatge específic emprat en convencions	x	x			x	x	x		x	x		x						x
	11.2 Descriure i explicar els serveis que ofereix un departament de banquets i convencions	x	x	x	x	x	x	x		x	x		x						x
	11.3 Atendre les necessitats particulars del turista de negocis	x	x	x			x	x		x	x		x						x
	11.4 Escriure e-mails demanant i donant informació sobre serveis de convencions	x			x	x		x		x	x		x					x	x
	11.5 Dissenyar programes per convencions	x				x		x		x	x		x						x
	11.6 Assessorar el client de negocis sobre convencions socials dels països amfitrions													x	x	x			x
	11.7 Confeccionar un llistat de consells pràctics sobre protocols socioculturals nacionals i internacionals													x	x	x			x
12	12.1 Descriure les funcions del departament de recepció	x	x	x	x	x	x	x	x	x	x		x	x					x
	12.2 Extreure i transmetre per escrit informació del "feedback" no sol·licitat al client que apareix en pàgines web	x			x	x		x		x	x		x	x				x	x
	12.3 Respectar els patrons de qualitat d'atenció al client d'un establiment													x	x	x	x		x

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

	8.3 Reconfortar el client i controlar una situació crítica	x	x				x	x		x	x								x	x
	8.4 Organitzar l'agenda personal del guia turístic	x			x	x		x		x	x		x						x	x
	8.5 Actuar i prendre decisions en situacions no previstes	x	x	x			x			x	x								x	x
	8.6 Donar assessorament als clients sobre l'actitud adequada en visitar països estrangers														x	x	x		x	x
9	9.1 Descriure les tasques i habilitats pròpies d'un animador turístic	x		x	x		x	x		x	x		x						x	x
	9.2 Sol·licitar treball d'animador turístic	x			x	x		x		x	x		x						x	x
	9.3 Elaborar un programa d'activitats en funció dels perfils dels clients	x			x	x		x		x	x		x						x	x
	9.4 Conèixer el llenguatge apropiat per treballar amb grups infantils	x	x				x	x		x	x		x						x	x
	9.5 Adequar el registre als diversos perfils dels clients														x	x	x		x	x
10	10.1 Tractar necessitats especials	x	x	x			x	x	x	x	x		x						x	x
	10.2 Donar informació sobre turisme especialitzat	x	x	x	x	x	x	x		x	x		x						x	x
	10.3 Identificar i respondre a les necessitats especials dels clients discapacitats	x	x	x			x	x		x	x		x						x	x
	10.4 Escriure un informe sobre el turisme especialitzat	x			x	x		x		x	x		x	x					x	x
	10.5 Entendre les diferències culturals dels clients de diferents països per														x	x	x		x	x

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

***Codis Objectius Generals**

1	**OGCO1** Utilitzar el coneixement dels aspectes formals de la llengua tant en la comprensió com en l'expressió para adequar-se a les situacions professionals més habituals.	**2**	**OGCO2** Comunicar-se oralment amb una certa correcció lingüística diferents situacions professionals.
3	**OGCO3** Comprendre les idees principals i extreure informació específica de discursos orals en l'àmbit professional.	**4**	**OGCO4** Comprendre les idees principals i extreure informació espe escrits de l'àmbit professional.
5	**OGCO5** Produir textos escrits complint els objectius i les pautes establides i organitzant la informació de manera adequada.	**6**	**OGCO6** Utilitzar amb una certa correcció l'accentuació, entonació i de l'expressió oral.
7	**OGCO7** Utilitzar un vocabulari ampli amb lèxic turístic i expressions específicament professionals.	**8**	**OGCO8** Participar en presentacions i discussions orals amb una cert capacitat d'argumentació.
9	**OGCO9** Mostrar un cert domini dels usos i convencions socials de la llengua i dels diferents registres	**10**	**OGCO10** Utilitzar el coneixement del context i d'aspectes sociocult parlants de la llengua estrangera per incrementar la comprensió i e comunicació
11	**OGCO11** Manifestar actituds participatives, cooperatives i respectuoses, tant a nivell de relacions humanes com mediambientals.	**12**	**OGCO12** Respondre amb immediatesa i de manera adequada en di professionals mostrant actitud de Servei.
13	**OGCO13** Utilitzar estratègies comunicatives i d'aprenentatge per reflexionar i actuar sobre les pròpies deficiències en l'expressió i en la comprensió oral i escrita.	**14**	**OGCO14** Utilitzar amb eficàcia els recursos disponibles per ampliar resoldre dubtes de forma autònoma fora de l'aula
15	**OGCO15** Dissenyar i estructurar projectes d'investigació	**16**	**OGCO16** Accedir a distintes fonts d'informació utilitzant diferents e
17	**OGCO17** Analitzar, interpretar i inferir dades i resultats: elaboració i presentació d'informes	**18**	**OGCO18** Manejar recursos digitals i com a instruments de difusió d

III. Continguts temàtics

Tema 1: Arrivals

Tema 2: A place to stay

Tema 3: Tourist information services

Tema 4 : Holiday Rep

Tema 5: Eating out

Tema 6: Rural tourism

Tema 7: Attractions and events

Tema 8: On tour

Tema 9: Hotel entertainment

Tema 10: Specialized tourism

Tema 11: Business travel

Tema 12: Checking out

IV. Metodologia d'aprenentatge

El temps previst de dedicació a la matèria per part dels alumnes inclou explícitament el temps d'aprenentatge fora de l'aula, ja sigui pel seu compte o en interacció amb altres alumnes, amb la possibilitat de disposar d'una gran varietat de recursos. Això comporta una concepció integrada dels processos d'ensenyament-aprenentatge-avaluació, amb una visió de l'avaluació continuada, multidimensional, contextuada, col·laborativa i centrada en l'aprenent, a més de la utilització de metodologies on l'alumne tingui un paper actiu i pugui aprendre per sí mateix de forma autònoma. D'altra banda, la preparació per l'aprenentatge continuat requereix una actitud positiva i responsable, de manera que es desenvoluparan estratègies que serveixin per aprendre a aprendre mitjançant processos reflexius. A més, la formació integral de les competències de l'alumne inclourà activitats de simulació que reprodueixin contextos d'aplicació reals i quotidians.

Partint de les necessitats situacionals dels futurs professionals del sector turístic i en base als plantejaments pedagògics de l'Espai Europeu d'Educació Superior, el nostre punt de mira serà la competència comunicativa dels alumnes, entenent que segons el Marc europeu comú de referència per a les llengües aquesta competència es composa de les competències lingüística, sociolingüística i pragmàtica -cadascuna de les quals integra coneixements, habilitats i saber fer-, a més d'una bateria d'estratègies comunicatives.

Es plantejaran tasques dins i fora de l'aula que permetin als alumnes de posar en pràctica estratègies de comunicació i aprenentatge, i l'observació de la realització de les activitats lingüístiques i de les estratègies desplegades pels alumnes

VIII. Bibliografia

Recursos bibliogràfics bàsics:

- Walker, R. & K. Harding. (2007): *Tourism 2*. Oxford: Oxford University Press.

Recursos bibliogràfics de consulta:

- Murphy, R. (2004): *English Grammar in Use*. Cambridge: Cambridge University Press.
- Diccionario Oxford Study Interactivo Español-Inglés / Inglés-Español. Oxford University Press

Recursos bibliogràfics d'ampliació:

- Business travel: conferences, incentive travel, exhibitions, corporate hospitality and corporate travel. Longman.
- Hempshell, M. (1998). *Getting a Job in Travel and Tourism.* Oxford: How to Books.

Webgrafia:

http://www.merriam-webster.com

http://www.oup.com/elt/oefc

http://www.onestopenglish.com/

www.jobsinhotels.co.uk

www.learndirect-advice.co.uk

www.Natives.co.uk

www.cntower.ca

www.ratztamara.com/rural.pdf

www.countrysideaccess.gov.uk

www.parksconservancy.co.uk

www.stga.co.uk

www.photoventures.net

http://www.tourismeducation.org/bibliography.htm

Activitats d'ensenyança i aprenentatge	Estimació hores de dedicació de l'alumne
	Hores treball autònom
- Realització d'activitats complementàries per a la consolidació dels continguts referents al tema	105
	105

VI. Sistema d'avaluació

Tota orientació metodològica ha de tenir implicacions en l'avaluació de l'alumne especialment si aquesta es considera integrada en el procés d'ensenyament-aprenentatge. Es en aquest sentit que l'assistència a un mínim d'un 75% de les classes sobre el total d'hores lectives programades es considera un requisit indispensable (les activitats realitzades durant l'absència d'un alumne no es podran recuperar). Els professors comunicaran als alumnes que no compleixin aquest requisit que hauran de realitzar les proves d'avaluació final.

Fins a la primera setmana del mes de març cada alumne haurà de decidir si vol seguir amb el sistema d'avaluació continuada o bé realitzar les proves d'avaluació final, i en aquest darrer cas l'alumne haurà de comunicar-ho al seu professor via e-mail i rebre la seva confirmació. El fet d'optar per l'avaluació continuada no implica que l'assignatura quedi automàticament aprovada. D'altra banda, si es decideix no seguir amb l'avaluació continuada no es tindrà en compte cap de les tasques realitzades i la superació del curs només dependrà dels resultats de les proves d'avaluació final.

Els criteris d'avaluació seran els següents:

Paràmetres de correcció de l'expressió escrita (sobre 10)

-Contingut: 2

-Riquesa lèxica/gramatical: 2

-Correcció lèxica/gramatical: 2

-Organització. 2

-Registre i format: 2

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

Paràmetres de correcció de l'expressió oral sobre 10)

-Gramàtica i vocabulari (riquesa, correcció i adequació):	2.5
-Gestió del discurs (rellevància, coherència i extensió):	2.5
-Pronunciació (accentuació, ritme, entonació i articulació de sons aïllats):	2.5
-Comunicació interactiva (inici, resposta, fluïdesa i torn de paraula):	2.5

Sistema d'avaluació continuada

D'entrada, si l'alumne ha de tenir un cert marge d'acció quant a l'autogestió del seu aprenentatge també haurà de tenir un cert grau de responsabilitat i un paper actiu durant l'avaluació. S'incorporaran, doncs, diferents punts de vista: el del professor, el del propi alumne i els dels seus companys. Es formarà i informarà als alumnes constantment en relació als processos i criteris d'avaluació.

S'incidirà en les estratègies de comunicació dels alumnes i en el desenvolupament de la seva competència pragmàtica i sociocultural en l'entorn professional del turisme, de manera que ens regirem no només per criteris de correcció lingüística, sino també per l'adequació interactiva i la coherència de les actuacions de cada alumne segons un registre d'ús lingüístic formal. Les deficiències quant a la correcció i l'adequació de les actuacions dels alumnes es tractaran de forma selectiva i en positiu i es contemplaran principalment com a oportunitats per a la provisió de *feedback* i de progressió.

D'altra banda, en valorar les competències dels alumnes es valorarà la seva capacitat per transferir els aprenentatges a contextos de la vida quotidiana i professional en comptes de restringir l'avaluació a l'àmbit dels coneixements purament conceptuals. No només ens centrarem en els resultats obtinguts, sinó també en les estratègies i els processos reflexius que els alumnes han realitzat per construir els seus aprenentatges.

El model d'avaluació, des dels vessants formatiu i també acreditatiu, incorporarà diferents modalitats avaluadores: la inicial, la formativa i la sumatòria. Per tal d'obtenir evidències del desenvolupament eficaç dels alumnes, es faran servir diferents fonts d'informació durant el curs. Els instruments d'avaluació que permetran obtenir dades en el decurs del procés sobre com es va produint aquest aprenentatge i com va evolucionant es detallen a continuació, juntament amb el seu pes en el 100% de la nota final (entre parèntesi s'indica el tema amb què estan relacionats).

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

Producció oral: 50%	Producció oral continuada: 30%	Entre 2 i 4 notes de roleplays i/o exposicions de classe/alumne (tots els temes)
	Exposició final: 20%	Presentació a la classe sobre turisme especialitzat (T10)
Producció escrita: 20%	Tasca 1: 5%	Descripció d'una destinació turística rural (T6)
	Tasca 2: 5%	Descripció d'un esdeveniment d'interés turístic i cultural (T7)
	Tasca 3: 5%	Descripció d'un itinerari turístic (T8)
	Tasca 4: 5%	Programa d'activitats per diferents perfils turístics (T9)
Portafolis: 20%	Tasca diagnòstica inicial: 2%	Autoavaluació inicial
	Tasca oral 1: 2%	Enregistrament: Presentació personal & informació sobre els serveis d'un hotel (T
	Tasca multimèdia: 2%	Recerca sobre diferents destinacions turístiques i serveis d'informació turística (T3
	Tasca escrita 1: 2%	Fulletó informatiu promocionant una destinació turística inventada (T3)
	Tasca oral 2: 2%	Enregistrament: Diàleg amb un estranger donant informació i fent recomanacions
	Tasca diagnòstica intermèdia: 2%	Auto i coavaluació intermèdia
	Tasca oral 3: 2%	Enregistrament: Descripció d'un monument turístic (T7)
	Tasca oral 4: 2%	Enregistrament: Presentació preparatòria per a l'exposició final sobre turisme esp
	Tasca escrita 2: 2%	Informació i promoció dels serveis de banquets i convencions (T11)
	Tasca diagnòstica final: 2%	Autoavaluació final
Implicació: 10%		Participació i contribucions de l'alumne dins i fora de l'aula

Assignatura: Comunicació en anglès en Turisme: Nivell iniciació

L'ús del portafolis com a instrument de formació i d'avaluació permetrà al professor i als alumnes basar-se en dades sistemàtiques i contrastades que caldrà justificar i acreditar per tal de dur a terme una avaluació longitudinal: és podrà comparar continuadament un estadi inicial amb els diferents estadis temporals que s'aniran evidenciant en el decurs del procés formatiu i actuar en conseqüència. L'alumne podrà anar deixant constància de les seves percepcions i reflexions quant a les seves motivacions, els obstacles amb els quals ensopega, els seus dubtes, els seus avenços i les seves carències, és a dir, que l'alumne podrà analitzar críticament el seu procés d'aprenentatge.

Els criteris per avaluar els portafolis dels alumnes seran molt clars. En aquest sentit es farà servir una llista de comprovació per tal que els alumnes puguin avaluar-se durant el procés d'elaboració del portafolis i el professor pugui supervisar-los i oferir feedback.

Sistema de proves d'avaluació final (per alumnes que no hagin seguit el sistema d'avaluació continuada)

Els alumnes que no segueixin el sistema d'avaluació continuada hauran de comunicar-ho al seu professor via e-mail com a molt tard la primera setmana de març i realitzar les proves d'avaluació final el dia de convocatòria oficial. Aquell mateix dia hauran de fer una presentació oral que caldrà haver preparat amb antelació seguint les pautes proporcionades prèviament. A més, abans de la data de les proves d'avaluació els alumnes serà necessari lliurar l'abstract o l'índex de la presentació, que serà puntuable. La presentació oral suposarà un 35% de la nota final.

La resta de proves d'avaluació final i el seu pes en la nota final es detallen a continuació:

-Prova de validació d'ús de la llengua (gramàtica i lèxic): 15%

-Prova de comprensió oral: 15%

-Prova de comprensió escrita: 15%

-Prova d'expressió escrita: 20%

VII. Cronograma orientatiu

Desenvolupament temes	Període	Dates d'avaluació continua[1]	Dates d'avaluació única[2]
Tema 1: Arrivals	Setmanes 1-3 14/9-29/9		
Tema 2: A place to stay	Setmanes 3-5 30/9-15/10		
Tema 3: Tourist information services	Setmanes 6-8 19/10-3/11		
Tema 4: Holiday rep	Setmanes 8-10 4/11-19/11		
Tema 5: Eating out	Setmanes 11-12 23/11-3/12		
Tema 6: Rural tourism	Setmanes 13-15 9/12-23/12		
Tema 7: Attractions and events	Setmanes 16-18 1/2-16/2		
Tema 8: On tour	Setmanes 18-20 17/2-4/3		
Tema 9: Hotel entertainment	Setmanes 21-23 8/3-23/3		
Tema 10: Specialized tourism	Setmanes 23-26 24/3-20/4		
Tema 11: Business travel	Setmanes 26-28 21/4-4/5		
Tema 12: Checking out	Setmanes 28-30 5/5-20/5		

[1] Consulteu l'apartat VI: Sistema d'avaluació
[2] Consulteu el calendari acadèmic

VIII. Bibliografia

Recursos bibliogràfics bàsics:

- Walker, R. & K. Harding. (2007): *Tourism 2*. Oxford: Oxford University Press.

Recursos bibliogràfics de consulta:

- Murphy, R. (2004): *English Grammar in Use*. Cambridge: Cambridge University Press.
- Diccionario Oxford Study Interactivo Español-Inglés / Inglés-Español. Oxford University Press

Recursos bibliogràfics d'ampliació:

- Business travel: conferences, incentive travel, exhibitions, corporate hospitality and corporate travel. Longman.
- Hempshell, M. (1998). *Getting a Job in Travel and Tourism.* Oxford: How to Books.

Webgrafia:

http://www.merriam-webster.com

http://www.oup.com/elt/oefc

http://www.onestopenglish.com/

www.jobsinhotels.co.uk

www.learndirect-advice.co.uk

www.Natives.co.uk

www.cntower.ca

www.ratztamara.com/rural.pdf

www.countrysideaccess.gov.uk

www.parksconservancy.co.uk

www.stga.co.uk

www.photoventures.net

http://www.tourismeducation.org/bibliography.htm

Appendix C: Snapshots and materials used in the Second Life classes

Module 1

Figure C1. Teacher modeling a waving gesture.

In the picture above, the teacher is showing the students how to animate their avatar with gestures. In this picture, we can see the teacher's arm is in an upright position and the Second Life interface has a window with the waving gesture. The teacher is modeling how to wave.

Figure C2. Student practicing a waving gesture.

In this picture, we can see how JoDa is waving. When a user activates a gesture, there is also an automatic message in the local chat indicating that a gesture has been activated. In the case of waving, we can see the message: ‘hey!’ on the bottom left area of the screen.

Figure C3. Class discussion about avatar appearance

In this picture, the teacher is asking the class which avatar they like best as it is the first class and the students have not seen each other's avatar's before. LaAd, using the local chat writes that she likes Tony's to which Tony replies through the text chat with a humorous comment: "of course xD". NoLe then tells the class where she got her tail from.

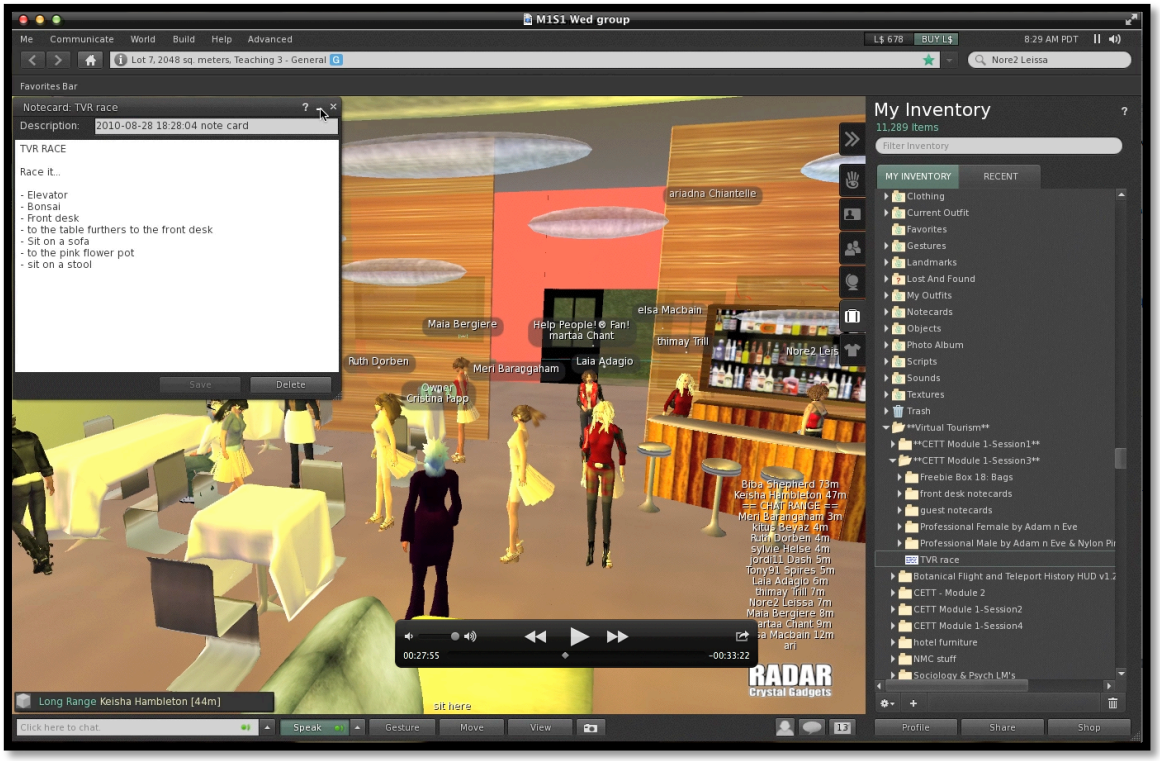


Figure C4. TVR activity

The class is inside the hotel and their first activity is a “total virtual response” activity with the aim of practicing their Second Life movement skills as well as getting familiar with the hotel. On the top right corner we can see the teacher’s notes for the activity, she has a list of locations in the hotel she wants the student’s to go to. This picture shows one of the locations the students have to find: the tables in the dining room.

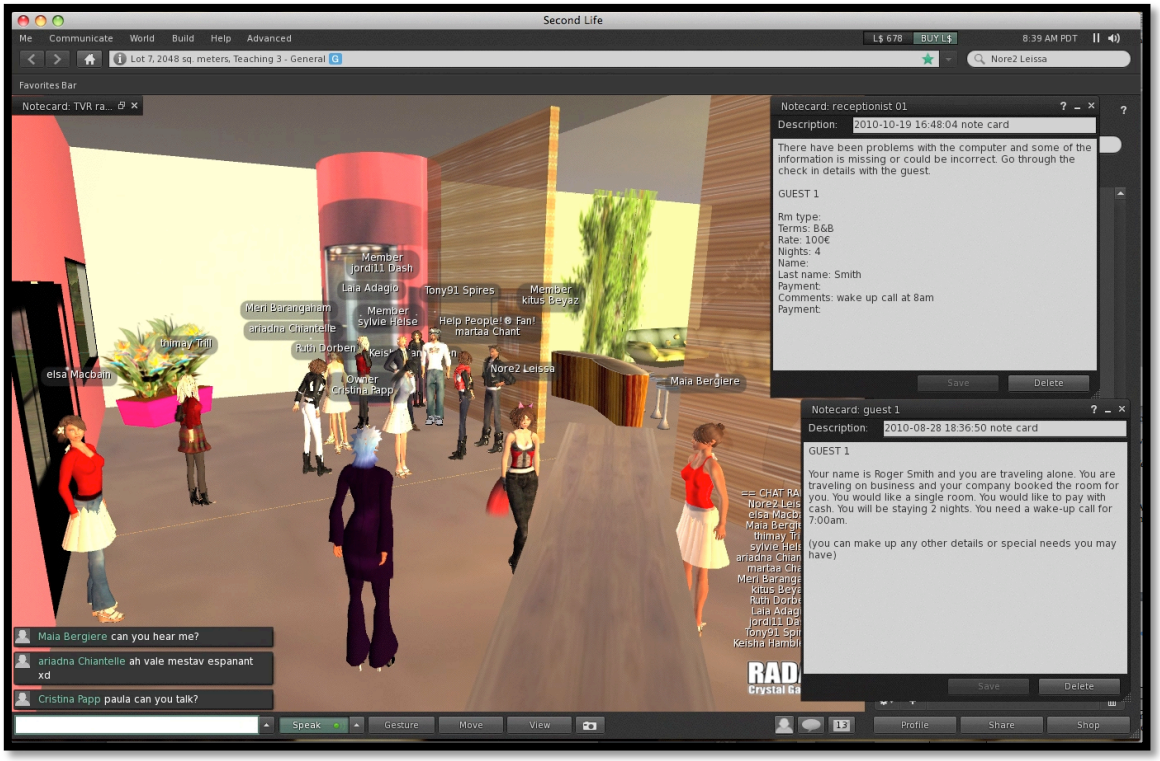


Figure C5. Hotel check-in role-play.

The picture above illustrates a check-in role play performed by MaBe and No Le. The teacher has both the receptionst's and the guest's note card on the right side of her screen, but can still see both avatars. Following are the notecards that MaBe and NoLe used.

GUEST 1

Your name is Roger Smith and you are traveling alone. You are traveling on business and your company booked the room for you. You would like a single room. You would like to pay with cash. You will be staying 2 nights. You need a wake-up call for 7:00am.

(you can make up any other details or special needs you may have)

Figure C6. Guest note card for check-in role-play.

RECEPTIONIST 1
There have been problems with the computer and some of the information is missing or could be incorrect. Go through the check in details with the guest.

GUEST DETAILS

Room type:
Terms: B&B
Rate: 100€
Nights: 4
Name:
Last name: Smith
Payment:
Comments: wake up call at 8am
Payment:

Figure C7. Receptionist note card for check-in role-play

Module 2

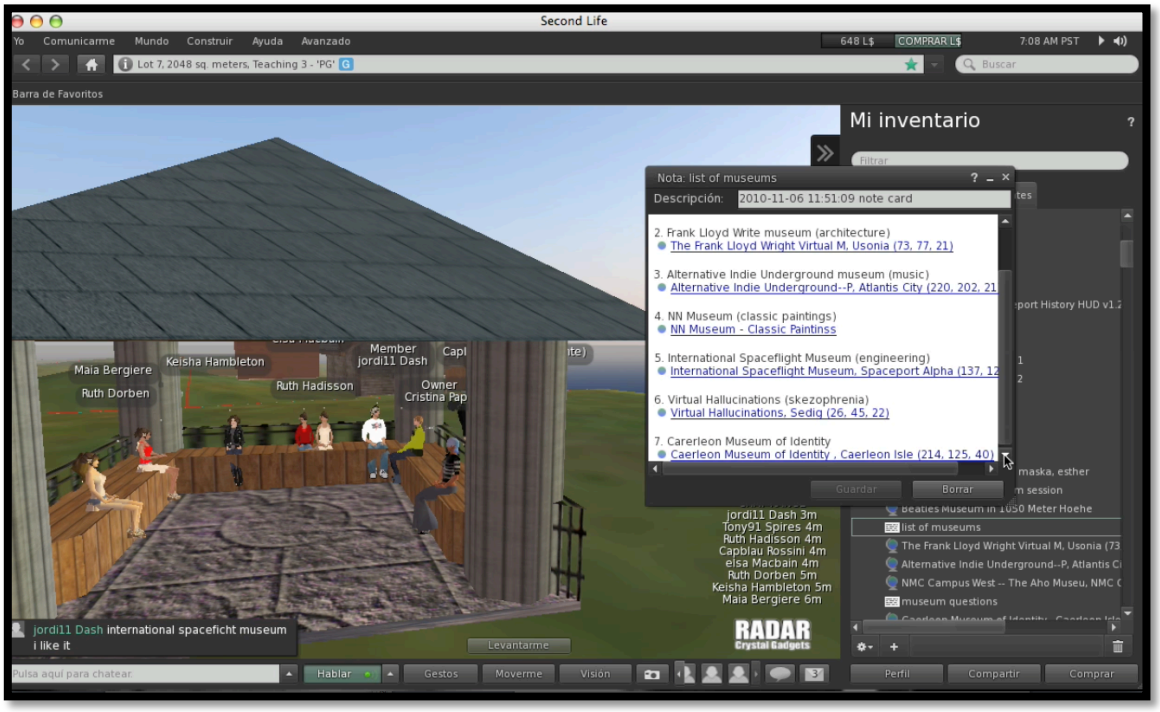


Figure C8. Class sitting in a gazebo and having a discussion about museums.

In this photo, the students are sitting around a gazebo. The teacher has given them a notecard, which she has also opened (see white window in figure C8), with a list of museums in Second Life. She is going over each museum because the students will have to choose one museum to prepare a guided tour.

LIST OF MUSEUMS

1. Beatles museum (music)
2. Frank Lloyd Write museum (architecture)
3. Alternative Indie Underground museum (music)
4. NN Museum (classic paintings)
5. International Spaceflight Museum (engineering)
6. Virtual Hallucinations (skezophrenia)
7. Carerleon Museum of Identity

Figure C9. List of museums notecard

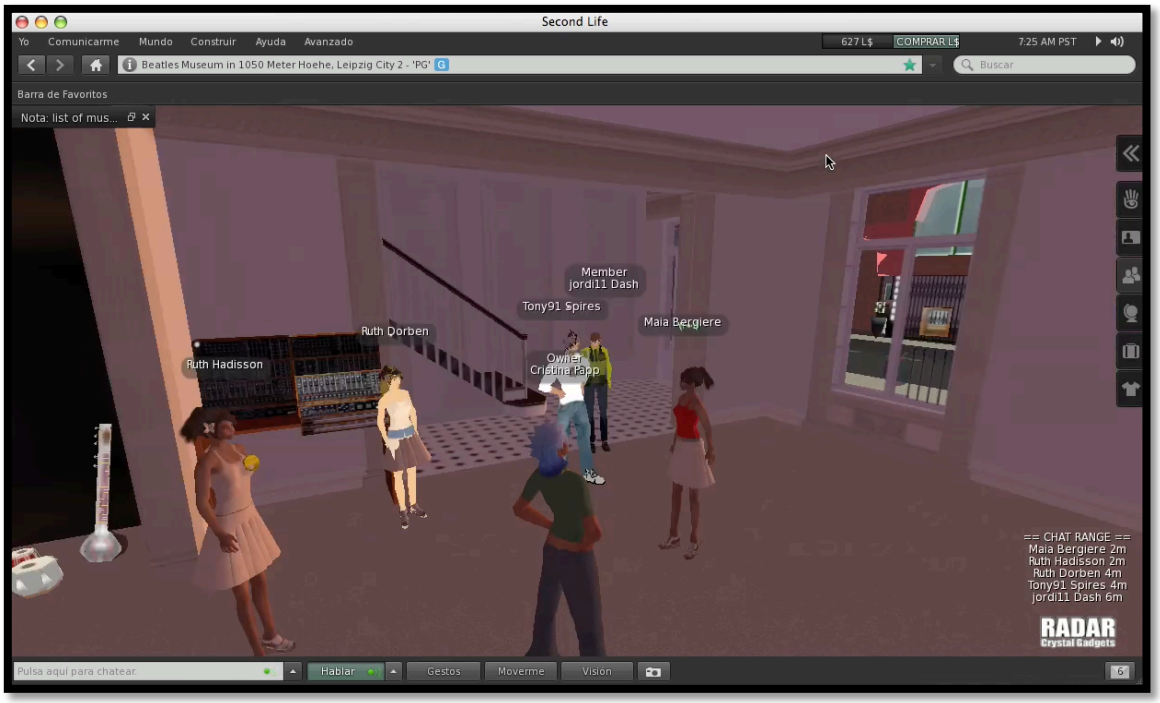


Figure C10. Group is giving a tour around the Beatles House Museum

MODULE 3

PARIS LANDMARK GUIDE

MONUMENTS

La Tour Eiffel :
L'Arc de Triomphe :
La Cathédrale Notre Dame :

WHAT TO DO

Le café des artistes
Moulin Rouge : Rubis Topaz

SAN FRANCISCO LANDMARK GUIDE

MONUMENTS

Golden Gate Bridge

WHAT TO DO

Fisherman's Wharf
The Castro District
Golden Gate Park

Figure C11. Landmark guides notecards

PARIS

You are going to make an oral presentation on your visit to Paris. Your oral presentation will have the following parts:

1. Introduction
2. Main monuments
3. What to do

In order to prepare for your oral presentation, go to virtual Paris and find the following information (take notes becuase you will be presenting this information orally after your visit):

1. Find out about one or two important monuments in the city (take notes about their features, what is special about them, activities you can do, etc.)

2. What cultural or leisure activities can tourists do in Paris?

Figure C12. Paris presentation guidelines notecard

SAN FRANCISCO

You are going to make an oral presentation on your visit to San Francisco. Your oral presentation will have the following parts:

1. Introduction
2. Main tourist attractions
3. What to do

In order to prepare for your oral presentation, go to virtual San Francisco and find the following information (take notes becuase you will be presenting this information orally after your visit):

1. Name two tourist attractions in San Francisco (take notes about their features, what is special about them, activities you can do, etc.)

2. Lombard Street is the most famous street in San Francisco, you can see it in many movies that take place in San Francisco. Do you know why it's famous?

3. Lombard Street also has typical San Francisco-style houses. Describe them.

4. What other cultural or leisure activities can tourists do in San Francisco?

SECTIONS IN PRESENTATION
- Introduction
- Description of monuments
- What to do

Figure C13. San Francisco presentation guidelines notecard

LANGUAGE FOR PRESENTATIONS

INTRODUCTION
- We are going to talk about…
- This city is known for its…
- The main monuments in this city are…
- I'd like to point out that…
- It has interesting features such as…

MONUMENT
- The building is (still) used for…
- It's built of marble

WHAT TO DO
- Visitors can…
- This city has a wealth of activities on offer
- If you're looking for… why not visit….?
- If you want to get out and about and be active…
- (name of city) also offers activities for families/children…
- It is a must for….

Figure C14. Language guide for presentations

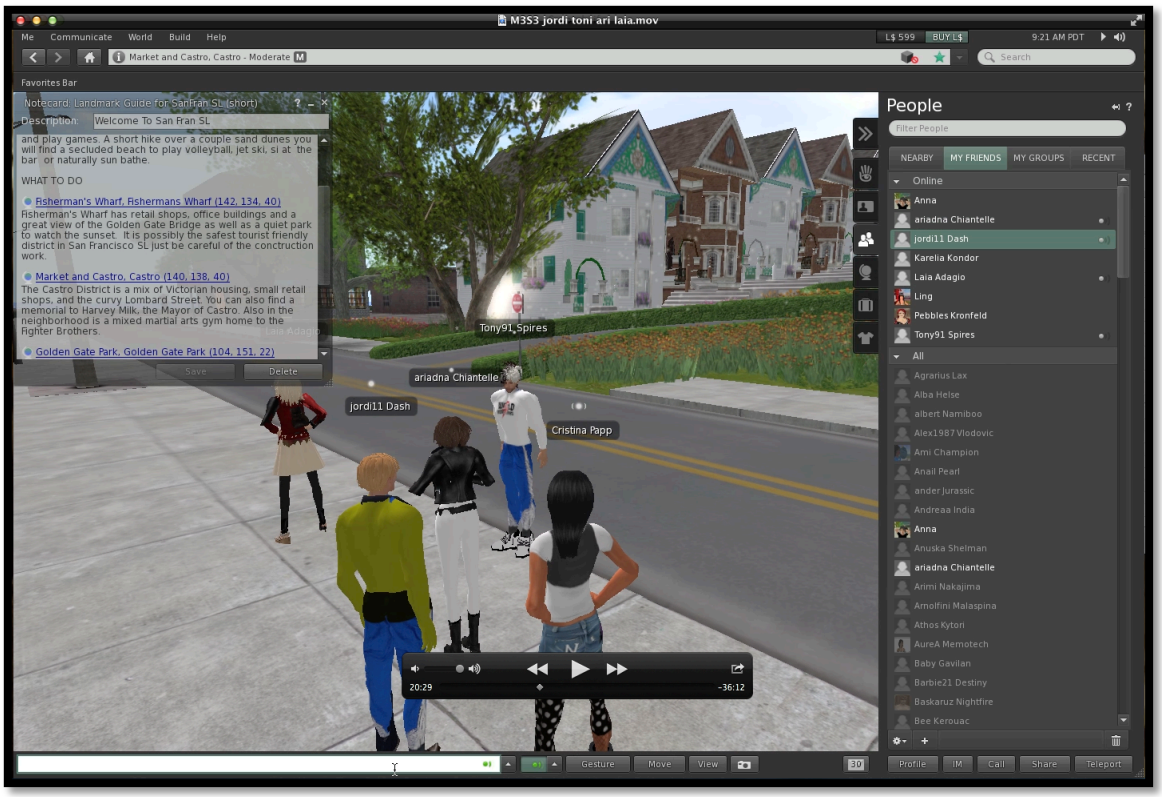
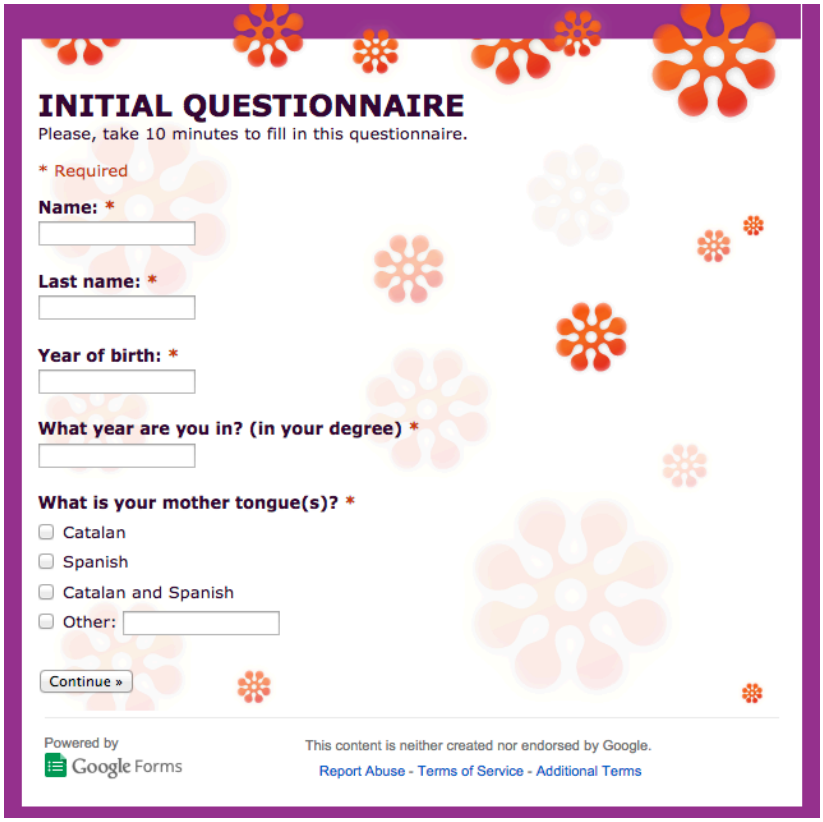


Figure C15. Group delivering a tour of San Francisco

Appendix D: Initial questionnaire[15]



Snapshot of the live form of the original online questionnaire administered to the students

PART I: PERSONAL INFORMATION

1. Name:
2. SL name:
3. Age:
4. What year are you in?
5. What is your mother tongue(s)?
    a. Catalan
    b. Spanish
    c. Catalan and Spanish
    d. Other(s) (please specify) _____

[15] Link to live form: https://docs.google.com/spreadsheet/viewform?formkey=dHhvVmdYX1NXMjlmR2NUdmt0WlFXU2c6MQ#gid=0

PART 2: FOREIGN LANGUAGE LEARNING

6. What foreign languages do you speak?
7. Think of your experience learning English
    a. How long have you learned English? _____(years)
    b. Where? _____
        i. School: _____ (years)
        ii. language school: _____ (years)
        iii. summer camps…): _____ (how many)
    c. What type of activities did you do during your last two school years? (tick on the frequency of each activity)

	Often	Sometimes	Hardly ever	Never
Grammar exercises				
Translation				
Role plays				
Conversation				
Presentations				
Compositions				
Writing activities				
Listening activities				
Reading activities				

    d. How much did you enjoy them?

	Very much	OK	Not too much	I hated them!
Grammar exercises				
Translation				
Role plays				
Conversation				
Presentations				
Compositions				
Writing activities				
Listening activities				
Reading activities				

    e. Do you have any English certificate?
    f. Are you preparing for taking an English certificate? Which?

8. Do you have any contact with English out of your English classes you take at university (e.g. Friends, music, magazines, books)? If so, what kind of contact?
    a. I have English speaking friends I practice with
    b. I listen to music in English
    c. I read magazines/newspapers/books in English
    d. I look for information on the internet
    e. I chat with people on the internet
    f. I watch TV or movies in English
    g. Other (please specify)

9. Why do you want to learn English? (You can tick more than one)
    a. Interested in the language
    b. Interested in the culture
    c. Have friends who speak the language
    d. Required to take a language course to graduate
    e. Need it for my future career
    f. Need it for travel
    g. Other:

10. How do you rate your speaking proficiency in English? (excellent, good, fair, poor)

Excellent	Good	Fair	Poor

11. It is very important for me to become a proficient speaker in English.

Strongly disagree	disagree	agree	Strongly agree

12. I enjoy learning foreign languages

Strongly disagree	disagree	agree	Strongly agree

PART 3: ICT and SECOND LIFE

13. How many hours do you use computer a week?
14. What do you use them for (allocate use and time) (university work, games, social networking)
15. Do you like learning languages through computers? (
16. Yes / no/ don't care)
17. Do you use any websites or ICT resources to work on your English? (websites, chats, games…) Which?

18. Have you ever been to SL? Yes / No. If so...
    a. How long have you been using it? (specify how many days, months, years) _____

19. In what ways do you think learning English in Second Life can be different than learning English in a face-to-face class?

Thank you for cooperating in answering this questionnaire![16]

[16] See participants' answers in attached CD

Appendix E: Session Questionnaires

MODULE 1: HOTELS (Session 1)
QUESTIONNAIRE ABOUT THE SESSION

Name:
Avatar Name:

Technical issues

- Did you have technical problems? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment.

- If you had any problems, are you going to try anything different next week?

- Was it difficult for you to move around in Second Life?

Class

- How did you feel? (Describe your experience in Second Life)

- Could you compare doing the check in role play in class and in SL? What is the difference?

- Did you feel lost at any part? Why?

Other observations or suggestions for the next class:

MODULE 1: Hotels (Session 2)
QUESTIONNAIRE ABOUT THE SESSION

Name:
Avatar Name:

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

- If you had any problems, are you going to try anything different the next time?

- Was it difficult for you to move around in Second Life?

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

Class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened=

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem?

- How did you feel during the role play in Second Life?

- Could you compare the complaints role play in class and in SL? What is the difference?

Other observations or suggestions for the next class:

MODULE 2: MUSEUMS (Session 1)
QUESTIONNAIRE ABOUT THE SESSION

Name:
Avatar Name:

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

Class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened?

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem? (e.g. use Catalan/Spanish, point at something, define a word…)

- Did you use any gestures from your avatar or did you use any non-verbal language like pointing? What did you use?

Other observations or suggestions for the next class:

-

MODULE 2 MUSEUMS (Session 2)
QUESTIONNAIRE ABOUT THE SESSION

Name: **Avatar Name:**

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

Class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened?

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem? (e.g. use Catalan/Spanish, point at something, define a word…)

- Did you use private messages (IM) at any time during the class? When and why? (e.g. with my group to prepare the notecard)

- Did you use any gestures from your avatar or did you use any non-verbal language like pointing? What did you use?

- What do you prefer to use, text chat or voice? Why?

Other observations or suggestions for the next class:

-

MODULE 2: MUSEUMS (Session 3)
QUESTIONNAIRE ABOUT THE SESSION

Name: Avatar Name:

Last week's class

- When you were preparing for your guided tour last week with your group in Second Life, how did you communicate:
    a. using text chat
    b. private chat
    c. voice
- When you were preparing for your guided tour last week with your group in Second Life, what language did you use:
    a. English
    b. Spanish
    c. Catalan

- Did you meet with your group out of class to prepare for the tour? Where did you meet (messenger, facebook, face to face…)

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

This week's class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened?

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem? (e.g. use Catalan/Spanish, point at something, define a word…)

- Did you use private messages (IM) at any time during the class? When and why? (e.g. with my group to prepare the notecard)

- What do you prefer to use, text chat or voice? Why?

- How did you do your guided tour? Did you use voice or text chat? Why?

- Did you use any gestures from your avatar or did you use any non-verbal language like pointing? What did you use?

General impressions

- Which part of the museum module did you like best?

- What did you learn in this museum module?

Would you like to do any activity in particular during the Second Life sessions in March?

Other observations or suggestions for the next class:

MODULE 3: CITIES (Session 1)
QUESTIONNAIRE ABOUT THE SESSION

Name: **Avatar Name:**

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

Class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened?

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem? (e.g. use Catalan/Spanish, point at something, define a word…)

- Did you use private messages (IM) at any time during the class? When and why? (e.g. with my group to prepare the notecard)

- Did you use any gestures from your avatar or did you use any non-verbal language like pointing? What did you use?

- What do you prefer to use, text chat or voice? Why?

Other observations or suggestions for the next class:

MODULE 3: CITIES (Session 2)
QUESTIONNAIRE ABOUT THE SESSION

Name: **Avatar Name:**

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

Class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened?

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem? (e.g. use Catalan/Spanish, point at something, define a word…)

- Did you use private messages (IM) at any time during the class? When and why? (e.g. with my group to prepare the notecard)

- Did you use any gestures from your avatar or did you use any non-verbal language like pointing? What did you use?

- What do you prefer to use, text chat or voice? Why?

Other observations or suggestions for the next class:

MODULE 3: CITIES (Session 3)
QUESTIONNAIRE ABOUT THE SESSION

Name: Avatar Name:

Preparation for the tour (homework)

- When you prepared with your group for the guided walking tour. Where did you meet? (at the university, telephone, messenger, Second Life…)

Did you prepare the tour together or did you each prepare a tourist attraction individually?

This week's class

Technical issues

- Did you have technical problems at any part of the class? (e.g. your microphone not working, couldn't hear others, the program was slow...). Please comment (if it was only at one part of the class, please indicate the problem and the part of the class you had this problem).

Off-screen

- Did you leave your computer at any moment during the class? For what (e.g. drink a glass of water, stretch your legs...)

- Did you have any other programs open? (e.g. e-mail, I-Tunes...)

- Did you have any material to help you with the class? (e.g. online dictionary, paper dictionary, class notes, class book...)

Class

- Did you have problems to understand somebody in the class? Who? Why?

- Did you have problems to understand any part of the class or did you feel lost at any part? Which part?

- Did any misunderstanding occur during the class? What happened?

- Did you have problems to communicate your ideas at any part of the class? When was that? What did you do to solve the problem? (e.g. use Catalan/Spanish, point at something, define a word…)

- Did you use private messages (IM) at any time during the class? When and why? (e.g. with my group to prepare the notecard)

- What do you prefer to use, text chat or voice? Why?
- How did you do your guided tour? Did you use voice or text chat? Why?

- Did you use any gestures from your avatar or did you use any non-verbal language like pointing? What did you use?

General impressions

- Which part of the virtual tourism module did you like best?

- What did you learn in this virtual tourism module?

- From the 3 modules we did (hotel, museums and virtual tourism) which one did you like best and why?

Appendix F: 3M transcription of session 1

Macro level of session 1

Contextual information of the session

- **Session:** M1S1
- **Group:** Wednesday
- **Duration:** 70 minutes
- **Location of the class:** This is the first session of the Second Life project and it is held entirely on the CE
- **Objects and props:** For this session, there is a fire and students stand around it in a circle for the warm
  hotel for the hotel race and recpetionsit and guest notecards for the check-in role play.
- **Participants:**
  - Teacher: the teacher is wearing a dark purple two-piece suit and has blue spiky hair. She has chos
    totally different from her real life persona.
  - Students: MaBe, MeBa, KiBe, RuDo, ToSp, TiTr, JoDa, ElMc, LaAd, SiHe, ArCh,
- **Aims:**
  - To learn basic SL skills (friending other avatars; writing, sending, and receiving notes; using gest
    sit)
  - To practice checking into a hotel and making special requests

0:00:00 - 0:26:03			0:26:03 - 0:29:00							
Warm-up/SL skills			**Activity 1: Hotel race**							
0:00:00 – 0:10:02	0:10:02 – 0:10:13	0:10:13 – 0:26:03	0:26:03 – 0:26:36	0:26:36 - 0:26:58	0:26:58 – 0:27:04	0:27:04 – 0:27:21	0:27:21 - 0:27:28	0:27:28 - 0:27:42	0:27:42 - 0:27:54	0:27 4 - 0:27 9
S01 	S02	S03	T01	S04	T02	S05	T03	S06	T04	S07

0:29:00 - 0:57:16							
Activity 2: Check-in role play							
0:29:00 – 0:34:26	0:34:26 – 0:34:36	0:34:36 – 0:44:50	0:44:50 – 0:49:37	0:49:37 – 0:51:16	0:51:16 – 0:52:20	0:52:20 – 0:55:01	0:55:0
S09	S10	S11	S12	S13	S14	S15	S16

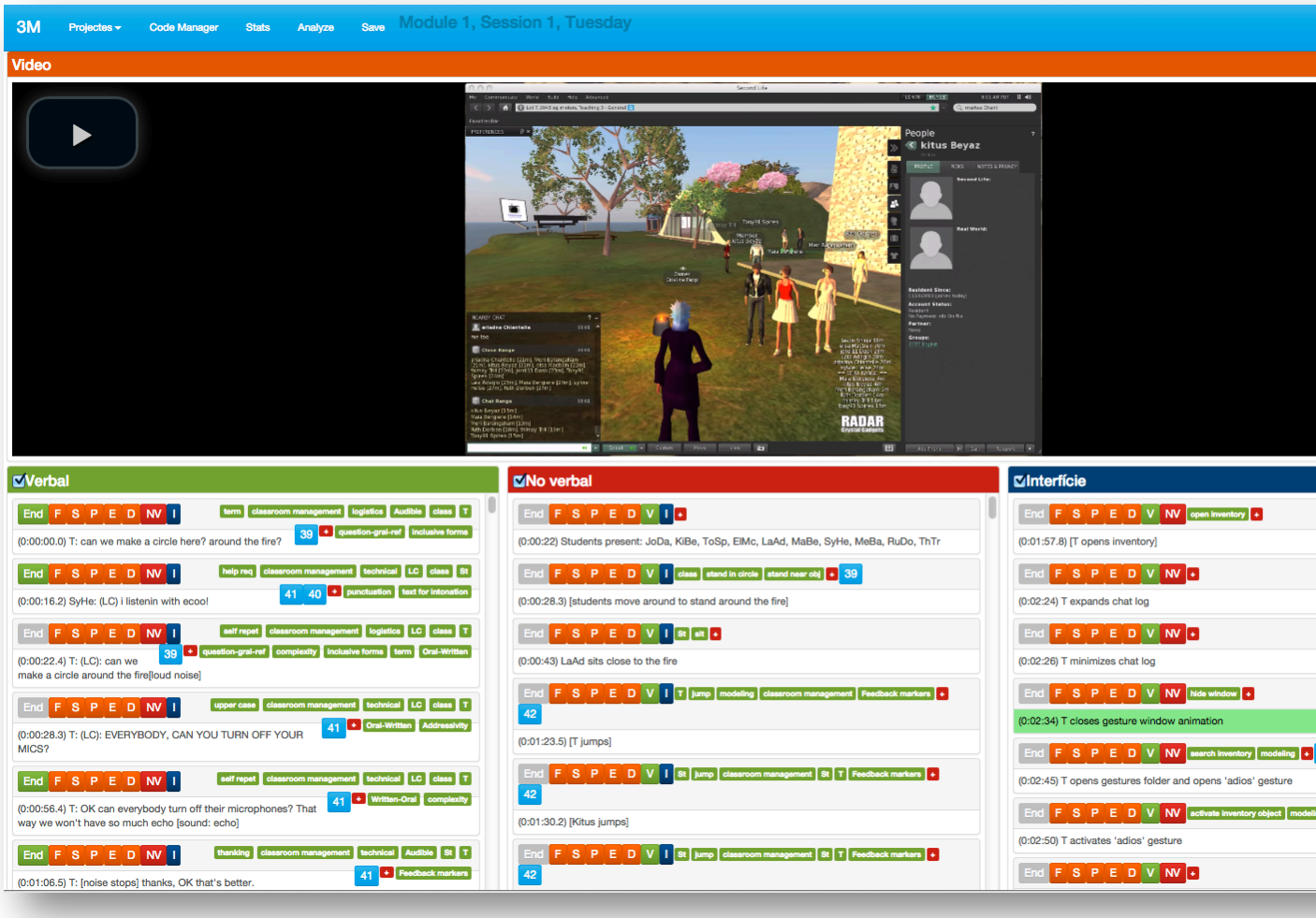


Figure F1. Micro transcription fragment of session M1S1

Appendix G: The 3M program

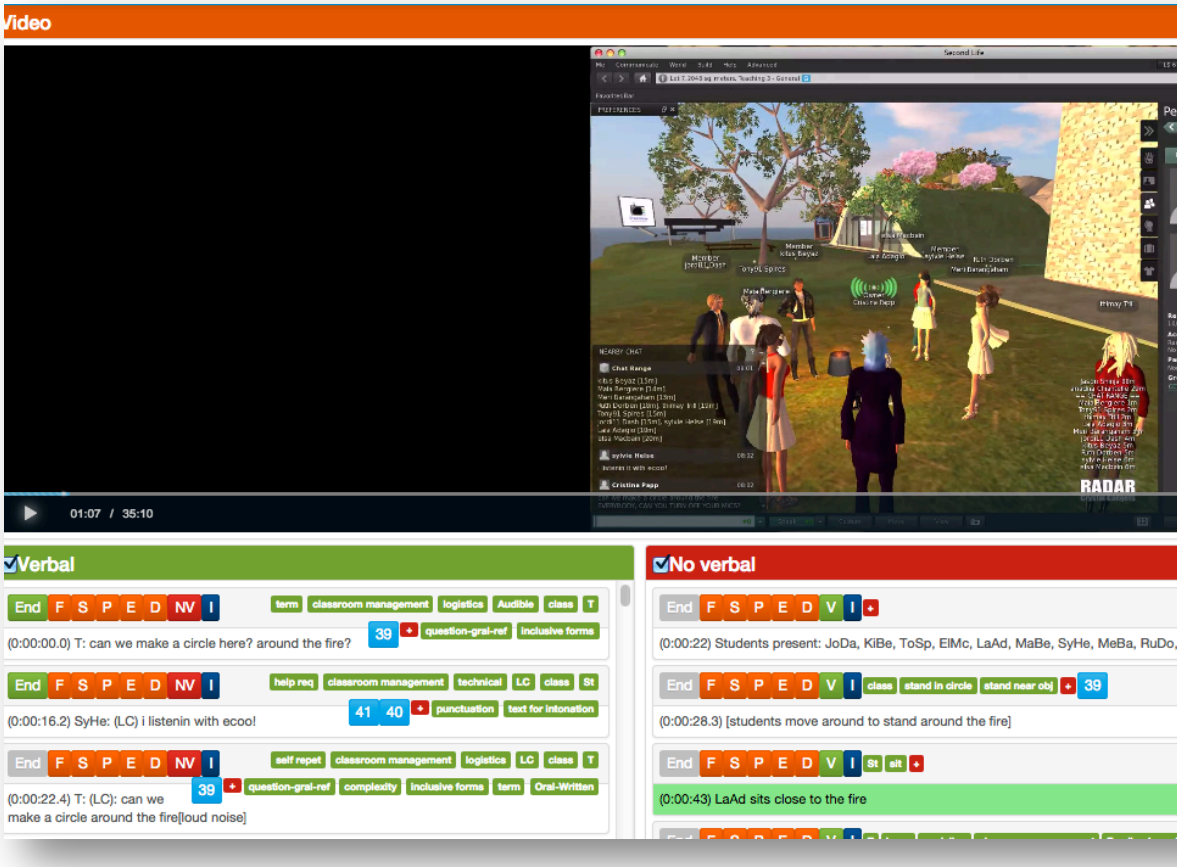


Figure G1. 3M program annotation interface. Verbal and non-verbal modes.

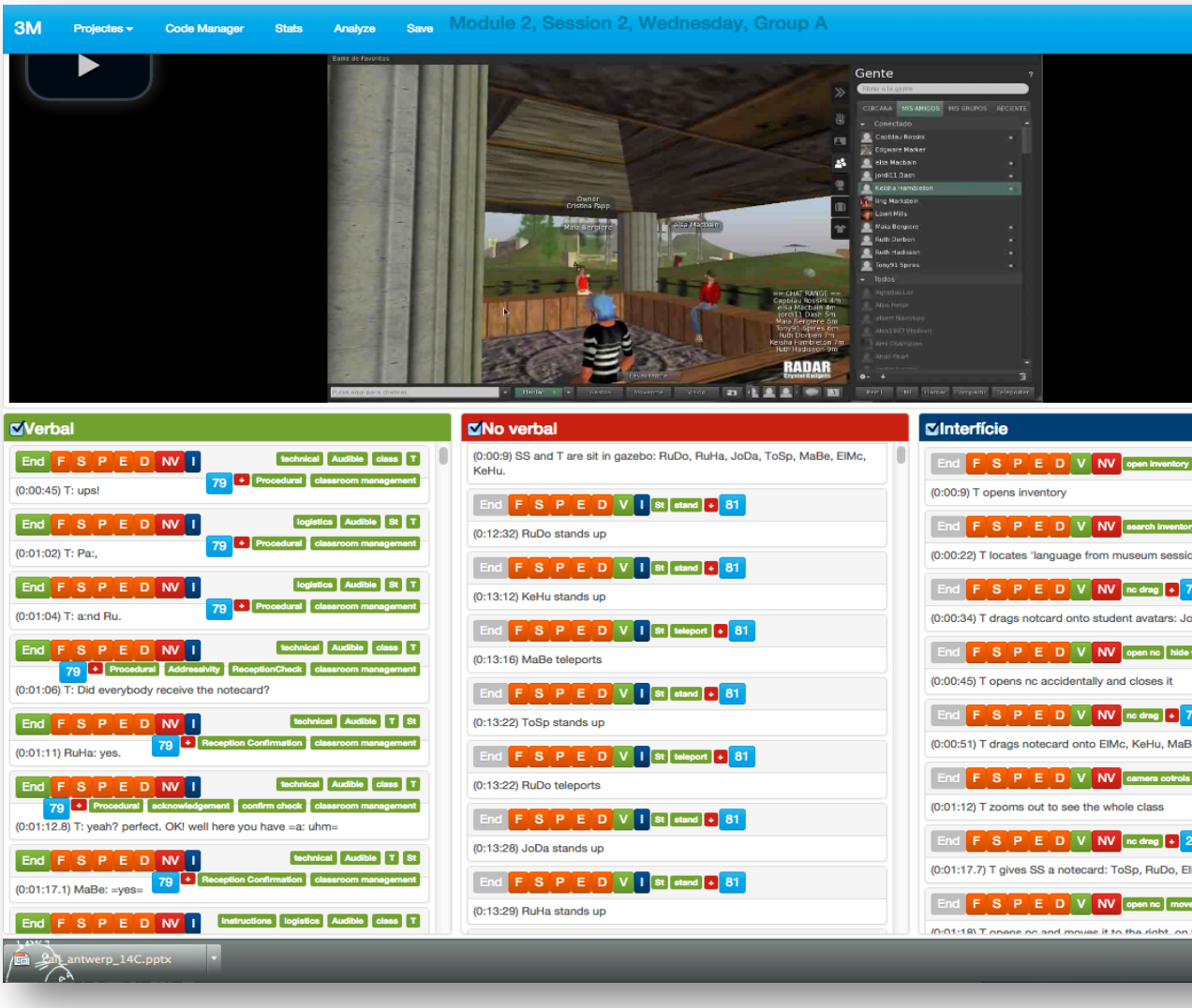


Figure G2. 3M program annotation interface.

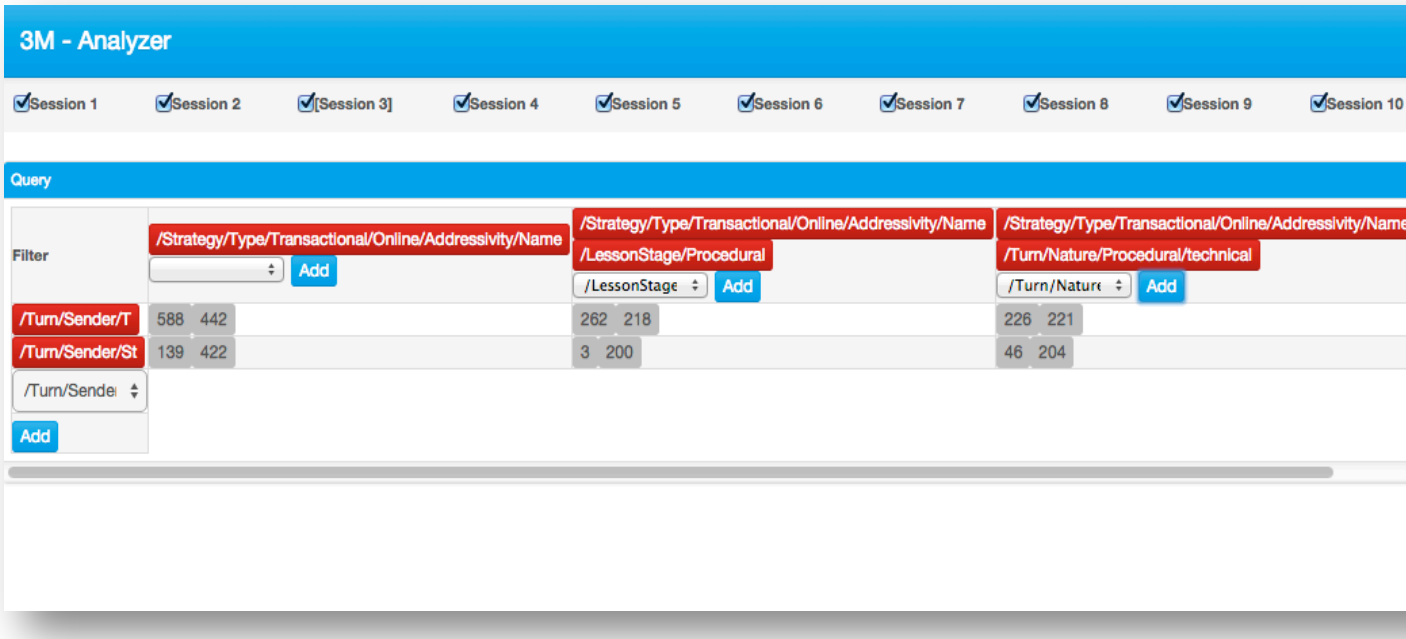


Figure G3. 3M program. Query interface (I).

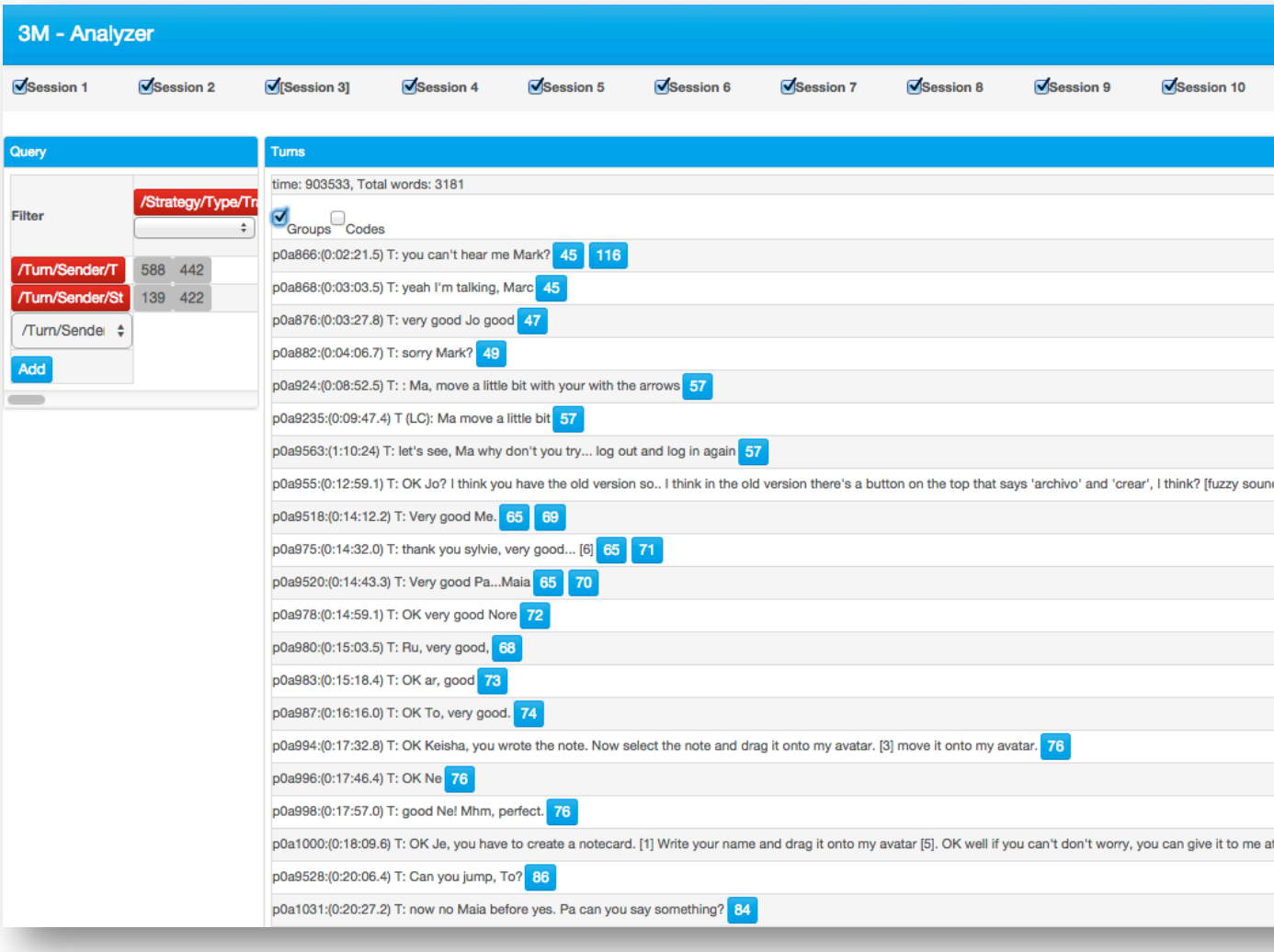


Figure G4. 3M program. Query interface (II).

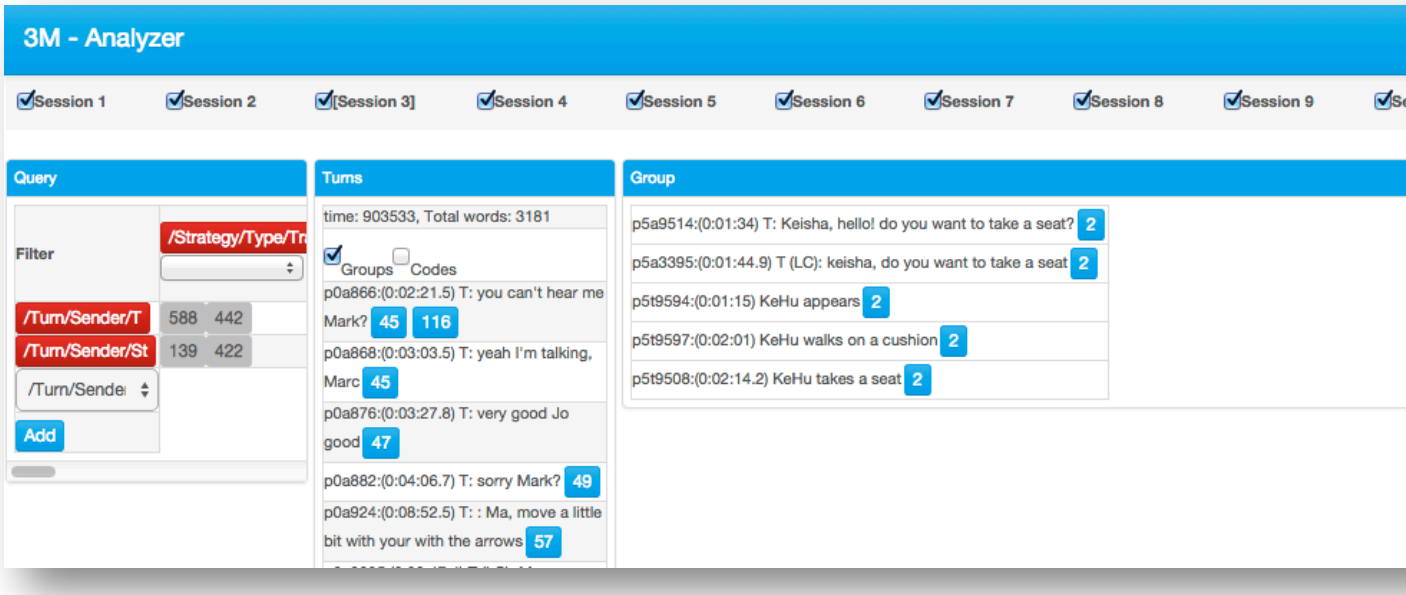


Figure G5. 3M program. Query interface (III).

Figure G1 above, shows a partial snapshot of the 3M annotation and coding interface. It shows the video plus two of the three boxes: the verbal and the non-verbal mode. This snapshot illustrates a sequence that links both verbal and non-verbal actions. In this sequence, the teacher asks the students through the oral chat to form a circle around the fire, 22 seconds later, she repeats her request through the text chat. 28 seconds after her first request, the students form a circle around the fire. This sequence is composed by two verbal turns that appear in the green box, one oral and one written, and a visual action which is transcribed in the red non-verbal box. Furthermore, this sequence is linked to the video of the session. These 3 turns and actions have been linked together through a number, in the picture we can see that they share a same number, 39. This sequence is also linked to the video. Thus, when the researcher queries a strategy, as we will see in G3, 4, and 5, the results show all the modes that have intervened.

Figure G2 shows a full snapshot of the 3M annotation and coding interface. We can see how the teacher has sent the students a note card, as this actions is transcribed in the blue interface box. The teacher then engages in a reception check through the verbal mode. Thus, in this example, the verbal mode and the interface are linked together in the same sequence through number 79.

Figures G3, G4, and G5 show how queries can be made in this program. In G3 we can observe that there is a header that enables the researcher to select the sessions they want to perform the query on. In this example, the query has been made on the whole set of the sessions. The analysis matrix enables the researcher to add columns and rows, each one containing one or more codes. Thus, each cell of the matrix contains the query resulting from the matching of the column codes and the row codes. In G3, for example, the first column queries the addressivity code and each row narrows the hits to the number of occurrences the

teacher (first row) or the student (second row) has made. A more complex example would be the second column in which we query two codes, addressivity and procedural classroom context. In this case, we can obtain the number of occurrences the teacher or student have used addressivity within a specific classroom context. Each cell contains two query results, the first number if the number of turns and the second is the number of groups.

Figure G4 illustrates the resulting list of turns that match the cell query. This list can be visualized as turns, and the researcher can also see the groups or codes each turns contains. If the researcher needs to see all the actions (verbal, non-verbal and interface) in the discourse sequence where a strategy has occurred, they can click on the group number, and the discourse sequence will appear on the inteface (see figure G5).

Appendix H: Transcription conventions for the verbal mode

The transcription code for the verbal mode was and adaptation of Calsamiglia and Tuson's (1995) and Atkinson and Heritage (1984) transcription models.

Prosodic symbols:

- Intonation
    - word? rising intonation
    - word. falling intonation
    - ? interrogative intonation
    - ! exclamatory intonation
    - <u>underlined</u> emphasis
    - : lengthening of sound
    - p piano, low tone
    - pp pianissimo, very low tone
    - f forte, loud tone
    - ff fortissimo, very loud tone

- Pauses
    - <1> short pause (1 sec)
    - <2> or <3> medium pause (2-3 secs)
    - <…> long pause (indicate seconds within brackets)
- Turns
    - …- truncated word
    - =…= and =…= turns overlapping: (the words go in the middle)

Other symbols:

- ( ) paralinguistic phenomena (laughs)
- (???) unintelligible or doubt

- *Second Life* conventions
    - (LC) local chat channel
    - (IM) Instant Message channel

Appendix I: Codebook for turns and embodied actions

Code name	Definition
MODE	A mode is a socially and culturally shaped resource for making meaning (ex. l speech, moving image). Meanings are made in a variety of modes and always (Kress & van Leeuwen, 2001) In this study we have considered the verbal mode (oral and written) and the no spatial embodied actions)
MEDIUM	It is the substance in and through which meaning is realized (i.e. screen or inte
Turn	What is said or done during the time for which the speaker role is continuousl (Widdowson, 1978, p.7). In this study we consider both oral and written turns There will also be a change in turn (1) when there is a change in the addressee significant happens in the non-verbal mode that triggers a turn from the same intervention (4) Also if the speaker pauses for more than 3 sec
Embodied action (Norris, 2004)	An embodied mode is when a person is employing it as an extension of their c is created, it has taken on a life of its own and people use the object as a disem 2004). Actions which are avatar or environment-based which participants perf through their avatar (gesture, movement)

1. TURN AND ACTION LEVEL: CODES FOR THE VERBAL TURNS AND THE NON-VERBAL ACT

Code name		Definition		Examples
Non-Verbal / Visual And Spatial Mode		Encompasses any embodied action that the user activates or performs voluntarily. It can come f appearance) or its relationship with the environment: kinesics, proxemics, layout.		
	Avatar-related	Non-verbal behavior originating from the avatar		
		- Gesture (point, wave)		MaBe points at painti
		- animation		MeBa relaxes on cush
	Environment-related	Non-verbal behavior resulting from the interaction of the avatar and the environment		
		- kinesics: movement (sit, stand up, jump, walk, run, fly, tp)		MaBe jumps
		- proxemics: distance from one avatar to another, orientation		MaBe faces the T
Verbal mode		Encompasses any form of verbal communication (audible and textual modes)		
	Audio modality			
		Public audio	Audio messages that can be heard from a X radius	T: Can you turn off y
	Text modality			
		Local chat (LC)	Text messages that can be read from a X radius	T (LC): Can you turn
		Instant message (IM)	Private message from one avatar to another one. They are not distance dependent.	T (IM): Where are yo

List of embodied actions:

ENVIRONMENT RELATED		
KINESICS	**PROXEMICS**	**C**
- Stand up	Stand in a circle / join the circle	- point
- Sit down	Face / position avi towards: avatar / object	- wave
- Turn		- eat
- Fly / land	Fly towards: an avatar / object	- animation/
- Walk	Walk towards: an avatar/object	
- Jump		
- Teleport		
- enter / exit world		

1.1. Functions of verbal turns (Osman and Herring, 2007)

1. Language task-focused	Related to the subject matter or task directly	
	- Task	Turn pertains to the contents and communicative message of an ut of students
	- Form	Linguistic content of an utterance
2. Procedural	Not directly related to the task	
	- Logistics / conversation management	Refers to the completion of task, establish deadlines, groups… cla giving turns, inviting to participate, acknowledging a turn
	- Technical	Functionality and use of communication tools
	- Social	Small talk, greetings, polite behaviors

2. ONLINE STRATEGIES

2.1. TRANSACTIONAL STRATEGIES: Strategies focused on the transmission of information (Peters

Netspeak			
1.1. Addressivity	Naming the intended recipient of the message to compensate for the lack of visual cues (Werry, 2008)		
	1.1.1. Name	Using the name of the intended recipient	T
	1.1.2. General	Using a generic pronoun or noun like *everybody*	T r
	1.1.3. Zero	Context makes addressee clear	
	1.1.4. Visual	Positioning one's avatar in front of their interlocutor	M T T t
1.2. Feedback markers	Markers the interlocutor uses to express presence or understanding of a message or to keep the c Peterson, 2006)		
	1.2.1. acknowledgement	Show agreement or understanding of a turn (*mhm, yeah)*	T
	1.2.2. continuer	Signal the right to continue	T
	1.2.3. assessment	Appreciation of what has been said to express interest or surprise (*wow!)*	T
	1.2.4. follow-up question	Asking for further details	T
	1.2.5 non-verbal vocalization	Non-verbal vocalizations such as laughter	[
1.3. Time-saving	Strategies that reduce the time needed to write the message. (Murray, 2000; Werry, 1996; Peters		
	1.3.1. abbreviations	Shortening of a word	T
	1.3.2. acronyms	Word formed from the first letters of each word	T S
Technical or meta-environment strategies			
1.4. Tech help	T or SS give advice to someone else on the technical nature of SL		
	1.4.1. Technical instructions	Providing instructions on how to perform an action in SL	T a
	1.4.2. Reaction to SS' appeal	Teacher provides technical help prompted by a student's	T

	for help	appeal for help	y
	1.4.3. Reaction to sound problems	Teacher provides technical help when a student is having sound problems	T c
1.5. Channel check		Checking that the channel is open, working	M
1.6. Reception check		Checking that students have received a material	T
1.7. Reception confirmation		Confirming that the user has received a notecard or an object	(r (
1.8. ID check		Checking the avatar's identity	T
Multi-mode strategies			
In-world reference (Wigham, 2013; Ornberg, 2005)			
	Term	Referring to an in-world object verbally by naming it	T
	Deictic	Referring to an in-world object verbally by using a deicting	T
	Pointing	Referring to an in-world object non-verbally by pointing at it	T a
	Avatar proximity	Positioning an avatar near the object that is being referenced	P s
Visual addressivity (Naper)		Positioning one's avatar in front of their interlocutor	[
Channel switch		Using a different channel within the same discourse sequence	T T
Location check		Checking that all the participants are in the same location	T

2.2. INTERACTIONAL STRATEGIES: Strategies used to establish and maintain inter-personal relati
Peterson)

Positive politeness	**behaviors designed to establish and maintain social bonds in online communit and a desire to be part of the group**		
2.1. Agreement (Peterson, 2013)		Agreeing on what an interlocutor says	Jo

2.2. Inclusive forms (Peterson, 2013)		Use of inclusive forms such as 'we' to establish belonging to a group	T
2.3. Humor (Darhower, 2002, Baym, 2006)		Jokes or funny comments	0 al (0 (0 es
2.4. Small talk (Darhower, 2002)		Social talk that is not directly related to the task or lesson	M Se
2.5. MUVE talk		Talk about the MUVE environment	K tra is
2.6. Greetings and leave takings (Herring, Brown & Levinson)		Ritual exchange to establish social cohesion	T
2.7. Thanking		Please/ thank you	(0
2.8. Praise		Use of expressions of praise	
2.9. Keyboard symbols or emoticons (Werry, 1999)			
	2.9.1. Text for intonation	Lengthening vowels	A K
	2.9.2. Upper case	Use of upper case	M P
	2.9.3. Special punctuation		K
	2.9.4. Emoticons		A
2.10 Character names		Use of SL nicknames	T
2.11. Use of avatar animations		Use of avatar gestures or object animations	T
Negative politeness	social distance and autonomy are stressed, apologizing		
2.12. Apologies			A

3. TEACHER INTERACTIONAL DISCOURSE MODIFICATIONS

1.1. Clarification requests	Asking for clarification	p0a1182:(0:32: notecard, this i **p0a1183:(0:32**
1.2. Confirmation checks	The interlocutor is not sure of the speaker's message and confirms understanding of the speaker's contribution. (1) In order to check for confirmation, addressees may repeat all or part of the learner's preceding strategic utterance with rising intonation. (2) Also, the speaker may imply that he expects confirmation of it.	p0a9344:(0:30: **p0a1157:(0:30**
1.3. Comprehension check	The speaker makes sure that the interlocutor has understood	T: ehm in well NoLe: =ah=
1.4. Self-repetition	Repetition of one's one utterance	(0:29:43.7) T: r (0:29:53.5) T(L
1.5. Self-reformulation	Rephrase ones own utterance (for simplification…)	T: OK then you indie undergrou punkie but uh: is that there's a annoying, but i classic painting -NoLe: ehm the **T: ehm in well** NoLe: =ah= **T: uh a =mixtu**

4. CORRECTIVE FEEDBACK STRATEGIES

1.1. Clarification requests			T: Co, can you NoLe (LC): yes T: ah, OK. NoLe (LC): yo **T: sorry? you**
1.2. Confirmation checks		The interlocutor is not sure of the speaker's message and confirms understanding of the speaker's contribution. (1) in order to push student to reformulate, the addressee may repeat all or part of the learner's preceding strategic utterance with rising intonation (2) they may also try to guess the speaker's communicative intention and, sometimes, even the learner's desired but unavailable target language lexical item	NoLe: eh: the b **T: are about?** NoLe: about th
1.3. Recasts			
	1.3.1. Total	Rephrasing the learner's non-target-like utterance within a context for correction purposes	KH (LC): I wri **T: OK Keisha** the note and dra onto my avatar.
	1.3.2. Partial	T rephrases the incorrect of a learner's non-target-like utterance for corrective purposes	MaBe: it's a mu 'tuberias'? **T: a lot of uh:** **T (LC): tubes**
1.5. Student self-repair		Student self-correct	ArCh (LC): jo t ArCh (LC): **ple**
1.6. Student other-repair		A peer offers corrective feedback	

Appendix J: Task floorspace

a) Discussion task

Voice participation		Number of turns	Total words	Average words utterance	% floors (turn
A	T	62	1010	15.6	61%
	St	39	207	5.3	39%
B	T	54	910	16.3	77%
	St	16	86	5.3	23%

Text participation		Number of turns	Total words	Average words per turn	% floorspace (turns)
A	Teacher	16	57	3.5	47%
	Student	18	59	3.2	53%
B	Teacher	4	19	4.7	16%
	Student	38	99	2.6	84%

*Average word floorspace verbal mode (voice + text): teacher 81% and students 19%)

b) Guided tour

Voice participation		Number of utterances	Total words	Average words utterance	% floorspace (tu
A	Teacher	108	1500	10.6	47%
	Ne, Me, Co	120	883	7.8	53%
B	Teacher	82	1305	11.7	59%
	Jo, To, La, Ar	56	424	7.5	41%
C	Teacher	52	802	11.6	45%
	Pa, Ru	64	690	11.2	55%

Text participation		Number of turns	Total words	Average words per turn	% flo (turn
A	Teacher	30	130	4.3	
	Ne, Me, Co	42	138	3.2	
B	Teacher	26	81	3.1	
	Jo, To, Ar, La	64	222	3.4	
C	Teacher	6	28	4.6	
	Pa, Ru	3	7	2.3	

*Average word floorspace verbal mode (voice + text): teacher 62% and students 38%

Appendix K: CD contents

CLASS	VIDEO	TRANSCRIPTIONS
Module 1		
Session 1	M1.webm	M1.pdf
Module 2		
Session 1 (group A)	M2S1A.ogv	M2S1A.pdf
Session 2 (group A)	M2S2A.ogv	M2S2A.pdf
Session 2 (group B)	M2S2B.ogv	M2S2B.pdf
Museum tour (group A)	M2TourA.ogv	M2TourA.pdf
Museum tour (group B)	M2TourB.ogv	M2TourB.pdf
Module 3		
Session 1 (group A)	M3S1A.webm	M3S1A.pdf
Session 1 (group B)	M3S1B.webm	M3S1B.pdf
Tour (Ne, Me, Co)	M3TourCoMeNe.webm	M3TourCoMeNe.pdf
Tour (Jo, To, La, Ar)	M3TourJoToArLa.webm	M3TourJoToArLa.pdf
Tour (Pa, Ru)	M3TourPaRu.webm	M3TourPaRu.pdf